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Calvin Bryce Hoover

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INSTITUTIONAL AND THEORETICAL IMPLICATIONS OF ECONOMIC CHANGE*

By CALVIN B. HOOVER

I

What I am going to say might have most appropriately been given as an introduction to the program of which we are now in the midst. On the other hand, for reasons which will appear, I wish I could have waited until I could have heard all the papers and their discussion. The program grew out of my feeling that we needed very badly to have a cooperative look at the nature of our economic system as it exists now just past the midcentury. This feeling has been growing now for the thirty years during which I have wrestled as an academic with the complexities of economic theory in lecture and in seminar.

This feeling has been accentuated, not only as I have had the opportunity to observe the operation of economic systems fundamentally different from our own, such as the Soviet and the Nazi economic systems, but as I have observed, somewhat less intimately, economic systems which represented lesser divergencies from our own, such as that of the United Kingdom under the Labour government and those of the Scandinavian countries.

When I went to Russia immediately before the onset of the great depression, our own economy was still generally considered the epitome of capitalism. Soviet Russia, by contrast, was the only country with any significant degree of industrialization which no longer adhered to the capitalistic system. What are we to say of the situation today? Is capitalism stronger in the world now than then, or weaker? Have the national economies of the world become more highly "statized" or is there a recrudescence both of competition and of *laissez faire* in the world?

* Presidential address delivered at the Sixty-sixth Annual Meeting of the American Economic Association, Washington, December 29, 1953.

To ask such questions is to show at once how fundamentally times, terms and concepts have changed. To begin with, the economic system of Soviet Russia, together with its political, social and cultural manifestations, cannot be considered socialistic in any sense which would have been considered legitimate by Utopian socialist philosophers nor indeed by Marxian socialist theoreticians of pre-Soviet times. This Soviet society is far more authoritarian and less egalitarian than our own and the workers in it have far less control over the conditions of their employment. The Soviet economy is indeed collectivist and the antithesis of a capitalistic *laissez-faire* economic system but it cannot be described by the term socialistic if that term is to have its traditional meaning.

If the Soviet system cannot be considered socialistic, what of the economic systems of other important industrialized countries such as the United Kingdom, France, Germany, Italy and Japan, Canada and the United States? Can they be considered any longer capitalistic as that term has been understood in the past?

Here, too, we find complexity. It is not merely that it is difficult to forecast political-economic trends in these countries. The problem of analysis has a much more baffling aspect. It is this: How can one tell when an economic system has undergone fundamental change? What basic differences are there, for example, between an industry which has been nationalized and one which has not? You will recall Geoffrey Crowther's story about the British civil servant who explained to the visiting American that under the Labour government there were two categories of industries in the United Kingdom. One category, he said, comprised most industries, those which were still in private and corporate hands but over which the government nevertheless exercised a large measure of control. The other category comprised industries which had been nationalized, ***over which the government had no control at all!***

Those of us who have served our own government and who will recall difficulties in dealing with other government officials as compared with the sometimes lesser difficulties of an official clothed with the authority of government in dealing with executives of business corporations will, I think, find a real germ of truth in this nonsense.

What is not nonsense is to question how basically the organization and functioning of the railways, the coal mines or the steel industry in the United Kingdom, for example, differs under nationalization from that under private, corporate, ownership.

One might question whether the capitalistic system in the process of evolution through its corporate form has not developed toward the collectivist form, moving towards the point where transfiguration would be complete and the two would become virtually indistinguishable. This evolution, whether or not it is legitimate to characterize it in such ex-

treme terms, was eventually reflected, on the theoretical level, in the development by Chamberlin, Robinson, Stackelberg, and many others of the theories of imperfect and monopolistic competition and oligopoly which from the late 'twenties onward appeared to have modified, elaborated and complicated our older and simpler concepts of competition and monopoly.

This development reflected recognition that the pricing process, whether for goods or for the factors of production was no longer carried on simply between individuals in the traditional free market. Instead the capitalistic economy had become increasingly corporate and organizational.

My main concern tonight is with the question of the nature of our own economic system. If we could at one time call our economic system capitalism, meaning by that a system characterized by private property, individual enterprise, *laissez faire* and competition, and if we still call our system capitalism, have we changed the meaning of the word? In other words, have these characteristic economic institutions of capitalism been fundamentally impaired or altered?

At least the New Dealers among us were in nearly complete agreement by the time the great depression had reached its depth in the early nineteen-thirties that American industry was no longer characteristically competitive, even if some still believed that old-style competition could and should be restored. Others believed instead that since competition no longer satisfactorily regulated the economy, *laissez faire* might have to be abandoned and comprehensive government controls substituted.

The mass unemployment of the great depression was considered by New Dealers the tangible evidence of the failure of the imperfectly competitive system to function effectively. It was, of course, this mass unemployment which was responsible for the political support which the New Deal obtained in urban areas. Insufficiency of total wage payments of unorganized or ineffectively organized workers to purchase the products of corporate industry was considered a cause of "scarcity in the midst of plenty." Rigid prices for manufactured goods while farm products had to be sold in a competitive market were also held responsible for the deficiency in purchasing power reflected in the unsatisfactory relation between the prices of industrial goods and the incomes of farmers and laborers available for the purchase of these goods. This was and largely still is the rationale for the New Deal system of price supports in agriculture.

If there was any doubt as to whether the economic system was characterized by competition and by *laissez faire* before the New Deal there seemed little doubt in the minds of most conservatives, that this

was certainly not true after the New Dealers had once been allowed to get their hands on the economy. (It is only fair to state that I was one of the economists who advised the government during the first years of the New Deal.) The measures which the New Deal brought into being in agriculture, in industry and in monetary and budgetary policy were generally denounced by conservative businessmen and orthodox economists as inconsistent with the principles of *laissez-faire* capitalism. It was earnestly argued that if continued they were bound to destroy both democracy and capitalism.

A decade later I made a staff study, for the Committee for Economic Development, on the relation between foreign trade and domestic employment in connection with the possibilities of removing barriers to international trade. A comparison between international trade under the assumption of exchange between free economies, and international trade under the assumption of exchange between free economies, on the one hand, with stated-controlled economies, on the other, thus became relevant. Could we, however, speak of an economy as being free if the government permitted monopolistic arrangements within the various industries of the country? Some of our American industrialists in C.E.D. insisted that in this sense the British economy was no longer a free enterprise economy by the time of the outbreak of World War II, due to the wide-scale development of trade associations and cartel-type arrangements, towards which the Conservative government of the United Kingdom took quite a benevolent attitude. By contrast they argued that our economy *was* a free economy because of our antitrust legislation and its administration and the general spirit of free enterprise among American industrialists.

Some of the economists associated with C.E.D. decided to see what some of the young British economists who represented their government in wartime Washington would have to say to this. Consequently, we invited a number of them to dinner. When the question was first put to them, they refused to confirm the thesis that British industry was not characteristically competitive. Indeed they never did explicitly so agree. Finally, however, one of their number said: "Well, to tell the truth I think there is a good deal to the thesis. Domestically it would not be true to say that British industry was essentially competitive by the time World War II broke out. However, that does not mean that competition would not exist on the international market for steel, for example, since the British steel industry would still be competing with the German, the French and the American steel industries."

We had also invited Gunnar Myrdal, who was in this country at that time, to the meeting. He said to me, "It may be true that even though domestic competition had disappeared some sort of compe-

tition might still exist between the organized industries of the different countries. God knows, however, that would be a very different kind of competition from the sort which economists have had in mind when they have used the term in the past."

His statement has relevancy to the general subject of competition and monopoly and the degree and variants of these terms. Not many would maintain that competition among the few is likely to be essentially the same as competition among many or that the theoretical analysis essential to understanding either will be the same. Indeed, it is likely to be profoundly and basically different and the circumstance that one may still quite logically use the term competition to apply to two such differing economic mechanisms is at the root of a lot of our problems in price theory. This point is well illustrated by the title of Fellner's book, *Competition Among the Few*.

It was about this time that I began to realize that American industrialists were no longer so unanimously claiming that *laissez faire* and the whole free enterprise system had been destroyed by the Roosevelt Administration, since they were so vigorously championing the virtues of the existing free enterprise system a decade after the inauguration of the New Deal. (Of course, none of us is consistent, and the same man who points with pride to the glories of the vigorous American system of *laissez faire* and competition may the next day be mourning at its bier, the while he listens to some Marc Antony seeking to stir up the populace to take vengeance on the assassins of the system.)

A couple of years later, with the New Deal still unrepealed, it was the "progressives" among those who influenced our economic policy in occupied Germany who, perhaps with tongue in cheek, insisted that cartels should be abolished and that a competitive economy should be set up on the United States model! Many of this extreme wing of opinion had been insisting that in the United States we had monopoly capitalism to such an extent that the legislative program of the New Deal had been necessary to alleviate the monopolistic evils of the capitalistic system and if these measures failed, as they might well fail, socialism would be the only remedy. Apparently competition and free enterprise had somehow come to life again in the United States in left wing opinion as in right wing opinion!

When the Economic Cooperation Administration came into existence in 1948, it became official American policy to try to induce European countries to dismantle cartels and to imitate as nearly as possible "the free enterprise system" of the United States. The American industrialists who participated in the ECA enthusiastically supported this policy. In a sense perhaps it was consistent for them to do so. British industrialists might argue wryly that there was not a single cartel in all

Germany or in the United Kingdom as big as some individual corporations in the United States, but this could perhaps be overlooked as irrelevant. It was, nevertheless, a little puzzling to observe the way in which the economic measures of Roosevelt and Truman which had been considered so destructively anticapitalistic by our industrialists were overlooked, at least momentarily, while the United States was pointed to as the peerless model of competition and *laissez faire*.

This fading away among our industrialists of their sense of catastrophe at what the New Deal had done to our economic system and their renewed confidence in the vitality of the American free enterprise system have no doubt been greatly accentuated by the Republican victory over the Democratic administration in the 1952 election. What is of greater significance to us is the way in which economists in the last six or eight years seem to have shifted their own point of view in respect to these matters. There has been a pronounced swing among economists *away* from the position that monopoly and quasimonopoly in its various forms and manifestations, and imperfections and impurities in competition, are perhaps as great or even of greater importance in the economy than is competition itself.

The reason for this shift has not been so much any change in what economists consider to be the actual institutional character of our system. I doubt whether the necessarily incomplete data which we have on the degree of concentration in industry and on the extent to which the degree of concentration has or has not changed through time or the difficulties in interpreting these data have been determinative. Of greater importance has been the dissatisfaction of economists with the various models of imperfect competition, monopolistic competition, oligopoly and so on. To the extent that these have been offered as representing both reality and universality economists were bound to doubt whether they were as useful as the traditional competitive model.

What I have called a "swing" among economists may reflect no more than the impact which we have all felt of the ideas expressed by Stigler, Friedman, Slichter and others, who hold that our economy is still in the main competitive and that an economic theory which has developed on this assumption need not be substantially altered to fit reasonably effectively the actually existing system.

It is not quite clear whether our system is supposed still to be characteristically competitive because our antitrust and related legislation and its administration has in fact been quite efficient in maintaining competition or whether the position is that competition is bound to maintain itself pretty much regardless of the law and its administration.

The various positions of economists on these interrelated questions become more than a little difficult to sort out. Galbraith, for example,

would not argue that the existence of countervailing power proves that our economy is still essentially competitive on the old model. He seems only to argue that it works as well as the competitive system did.

Suppose, however, that "countervailing power" were a reality and that it was just as effective or even more effective from the standpoint of producing national product as was the competitive system. Suppose that it also resulted in a distribution of income which was even superior from a moral point of view to that of the competitive system. This would prove very little about the degree to which the economic theory applicable to a competitive economy was also applicable to an economy of countervailing power. This observation applies to all those arguments which claim that the economy is essentially competitive since everything comes out about the same as under competition or even better!

II

It will by now have become apparent, I hope, that the program this year has been designed primarily to try to get at this question of where we stand with respect to the nature of our economic system and whether or not it differs in essence from what it was say seventy-five or fifty or twenty-five years ago. It is, of course, not easy to define what is meant by differing "in essence." As economists, I think the test would be whether or not the economic theory which we would construct for analytical purposes to deal with the system as it existed at any of these earlier time periods would be adequate now.

The participants in this program have tried to develop and apply this test to our problem. Since the many facets of the problem have had to be developed in the separate sessions, I shall try, as best I can, to integrate our cooperative effort and to indicate some of the complex conceptual interrelationships. I cannot, of course, set forth the answers which the participants have found. Indeed, most of the participants may disagree profoundly with my own conclusions. I can, however, indicate the kinds of questions which we have raised.

The first session for our program was set up to deal with the broader aspects of the question of how competitive the economy really is. We wanted to see clearly the positions taken on whether competition has or has not been fundamentally impaired as a regulator of the economy, as the protector of the consumer, and as the arbitrator of the divergent interests of buyers and sellers of productive resources as well.

Stigler has shrewdly pointed out that the competitive model of price determination is not intended to describe actual and individual pricing processes, but is intended only to be analytical and predictive. Perhaps a great deal of criticism of the classical model has arisen from our

failure to agree to this limitation on its purpose. What *is* supposed to be the relation from a descriptive point of view, between the classical competitive model and the actual pricing process as it manifests itself so differently in myriads of individual transactions in many different kinds of markets as well as in the absence of anything which could be logically considered a "market"? To get some light on this question we have tried to compare both our competitive and our imperfectly competitive models with the actual process of pricing in American industry.

It has been contended that, however imperfectly competitive our economy may be or however comprehensive governmental controls have been, over a reasonable period of time substantially the same results are produced as though the economy were in fact fully competitive. This approximation of the results of competition may come about because competitive forces begin to reassert themselves within the limits of the new controls or barriers and/or because competitive forces manage to evade the controls and circumvent the barriers. On the other hand, the governmental controls and barriers are often instituted on the assumption that competition has broken down and the controls and barriers are *intended* to produce the same result which competition would have produced had it been effective.

Schultz has pointed out in this connection that the results of governmental intervention in American agriculture have apparently not been so strikingly different from what they would have been had the competitive, *laissez-faire* model been operating. This question of whether or not American agriculture is still essentially competitive and *laissez faire* is obviously importantly determinative in assessing the essential character of our system. We have tried to grapple with the broad aspects of this problem under the title "Is the Economy More Competitive in the Long Run than in the Short Run?"

Basically connected with the question of whether the process of price determination in our economy is still essentially competitive, is that of whether or not the structure and functioning of the distributional system has been fundamentally altered. Have the changes which have taken place in the organization of industry, of labor, of agriculture and in the participation of government in the economy affected the size of distributional shares in the economy or the size of factor compensation? Is the economic theory which would be adequate for the analysis of distribution on the assumption of "atomistic" competition adequate for a much more complex kind of economy?

We have tried to get at these interrelated and complex questions from a number of different angles. The most general form of the question is: To what extent can economic power be exercised through organization to affect income distribution and factor compensation? What is

the relation between the factors affecting the size of functional shares and factor compensation and the diminished inequality in personal income distribution shown by the National Bureau study of Kuznets? Are the answers which we put forward in connection with income distribution consistent with those which we find when we analyze the process of wage determination in the current economy?

We have dealt also with the effects upon the structure and functioning of the American economy of the institutionalization of saving and investment and the extraordinary intermingling of these processes with those of the creation and management of the money supply. We raise the question: To what extent does the quantity of capital available depend upon individual decisions to consume or to refrain from consumption as compared with the effect of decisions to invest by the managements of corporations or of governments to run deficits, as self-generating factors in increasing the money-capital supply?

Closely related is the problem in which it seemed at one time we were to be completely swallowed up. Can the private economy be expected to maintain the level of investment and consumption necessary to support a tolerable level of employment if the government reduces substantially its now gigantic expenditures for national defense or wipes out the budgetary deficit?

This problem, which involves the whole Keynesian type of analysis, is tied in with our general subject from two directions. It has been argued that the failure of our economy to maintain full employment is due to the "stickiness" of prices and wages. Such "stickiness" could hardly exist in a fully competitive economy. The monetary aspects of our economy are fundamental to its essential character. Whenever depression characterizes the economy we can be sure that measures which will be proposed to cure the depression are not going to be of a purely monetary character but are likely to affect profoundly the nature of our economic system.

Finally, turning from the domestic scene, we raise the question of the validity of orthodox international trade theory in a world characterized by current economic institutions. As Viner puts it in the last two sentences in the introduction to his *International Economics* published in 1951:

> The world has changed greatly, and is now a world of planned economies, of state trading, of substantially arbitrary and inflexible national price structures, and of managed instability in exchange rates. The classical theory is not directly relevant for such a world, and it may be that for such a world there is and can be no relevant general theory.[1]

[1] It may well be that these two sentences do not adequately represent Viner's considered position on this subject.

We can hope that with the slogan of "Trade Not Aid" we may be passing out of this sort of world. I doubt that this transition will happen soon enough or be thorough-going enough to destroy the usefulness of our effort at this sort of analysis.

III

After looking at this complex problem from so many diverse angles, my own conclusion is that our economy has indeed undergone substantial organizational and functional changes. The development of an economic theory adequate for an understanding of this current mixed type of economy presents us with serious problems requiring the full concentration of our energies.

Assuredly it does not follow that competition has disappeared. It is perfectly clear that competition, if we stretch the term enough, covers almost completely some aspects of our economy and affects in some degree every part of it. If, however, we use the term capitalism to designate the kind of economic systm which characterized the United States in the past we would at least need to use some qualifying adjective or adjectives to designate the current economic system in which the role of competition has altered. But to find the right adjectives, to say just when the change occurred, to draw the line between past and present is extraordinarily difficult.

In part, this difficulty of establishing the chronology of change is due to the natural tendency to define a competitive *laissez-faire* economy in terms of abstract and ideal models. Frank Knight, and many others, have pointed out—although not in this phraseology—that in a very real sense "Competition is not what it used to be *and never was.*" J. M. Clark has stressed, for example, the illogicalness of supposing that the actual institutional pricing system for manufactured goods ever was at any time like the pricing of staple agricultural products from which the competitive pricing model was so largely derived. It has been repeatedly remarked in this connection that "administered prices," for example, are not a recent phenomenon.

Yet even after the difficulties of establishing chronology are conceded, it seems to me that we can say that by the beginning of World War I our economy had become sufficiently characterized by concentration in industry, imperfect competition, oligopoly, administered industrial prices, price leadership and other departures from or modifications of the rule of the free, fully competitive market for us to consider the change fundamental.

By the beginning of World War II there had taken place another fundamental change involving a substantial departure from the princi-

ple of *laissez faire*. Labor unions and farm organizations had been unhappy long before the New Deal at what they considered the imbalance between their own economic power and that of industrial and financial corporations. By the time the bottom of the depression had been reached, labor unions and farm organizations had become determined to correct this economic imbalance of power by the use of political power.

Through the Agricultural Adjustment Act, the Wagner Act and other associated legislation of the New Deal, the powers of government were used to effectuate the purposes of these organizations. This meant direct intervention by government in the pricing and production processes of agriculture. It meant the strengthening of the bargaining powers of labor unions by law and the frequent intervention by government on the side of labor unions in industrial disputes. Whether any previously existing imbalance of power was not more than corrected remains a matter of controversy.

The New Deal and the Fair Deal not only threw the power of the state on the side of labor and farm organizations in a bargaining sense. Beyond this, the government came to assume the responsibility whenever necessary, for the maintenance, through governmental spending and lending, deficit financing and the redistribution of income through taxation, of a volume of purchasing power sufficiently large to underwrite the higher wage rates and farm prices. In this way the policy of throwing the powers of government on the side of particular economic groups was married to the Keynesian monetary and credit policy.[2] The potentially inflationary bias in the economy inherent in the implementation of this policy is obvious.

I have had to leave out for lack of time the development of the "welfare capitalism" point of view among industrialists on the one hand and the passage of social security legislation on the other, although both of these have substantially reduced the rigors of our economic system and might well be included in the list of substantial modifications of the economic system. Even more fundamental has been the generally rcognized development of a managerial class whose interest in the corporation and whose point of view is not exclusively that of profit maximization for the stockholders. To the extent that this is true, a substantial modification of the capitalistic system is reflected, since of course in the traditional model the public interest is served through the effort at profit maximization.

[2] Keynes would no doubt in principle have opposed the marriage. Equilibrium at less than full employment he did not consider to depend upon sticky prices although it did depend upon sticky money wages. Further, Keynes believed that appropriate monetary, credit and fiscal policies would obviate the necessity for governmental control of prices and production.

The coming to power of a Republican administration has indeed slowed down and to some extent even reversed the trend towards state intervention in the regulation of the economy, just as the enactment of the Taft-Hartley Act somewhat reduced the economic and political power of labor unions. Yet I do not believe that the changes in trend which have occurred or are likely to occur would cause me to alter my conclusion that we have in actual fact a very mixed kind of economy rather than one characterized primarily by traditional competition and *laissez faire*.

It is not easy to find a term which will be descriptive of this mixed kind of economy. I think it might be called the "organizational economy"[3] to indicate the vastly increased role of industrial and financial corporations, labor unions and farm organizations and of the largest and most powerful of all organizations, the state, in an economy in which competition in old and new forms nevertheless still plays a strategic role.

As a result of the development of the organizational economy it seems to me that industrialists, labor leaders and governmental officials are bound to find themselves making decisions on matters which used to be governed by the relatively impersonal operation of the free market or which would have to be dealt with by a directing authority in a centrally planned economy. We cannot any longer be sure that in this current organizational economy these decisions will in their composite effect produce equilibrium at full employment, the optimum allocation of resources or the kind of pattern of distribution of income which either a competitive model of an economy or a centrally planned and administered economy would in theory produce.

A final illustration of this: An executive of one of the great pulp and paper companies, when complimented on the good labor relations in his industry, replied, with a sincere sense of pride: "Now-a-days the managements of the corporations in our industry consider their basic job to be marketing the labor embodied in our products. We try to sell this labor embodied in pulp and paper at the best price we can get for it, in the largest quantities practicable, without resorting to the kind of cut-throat competition which would make it impossible for the stockholders to get a fair return on the investment and, above all, for our labor to earn a decent living. Some folks might indeed charge that the managements of the companies in the industry act simply as selling agents for our labor union."

He felt that this represented an immense public gain over the "bad old times" when the managements of the various corporations in the

[3] This term is cognate with the title of Kenneth E. Boulding's book, ***The Organizational Revolution*** (New York, 1953).

industry cut prices and wages whenever necessary in order to get business away from the other fellow in the "reprehensible effort" of each corporation to maximize its profits. Suppose this so-claimed laboristic point of view spread to the managements of all large industries where marketwide collective bargaining existed and where the elasticity of demand for the product was such that a price increase could be passed on without an unacceptable decline in sales?

Under the circumstances I have outlined, the industrialists and labor leaders of such industries are making decisions which determine to a significant degree what the shares in the national income of pulp mill workers or steel workers and indeed of almost everyone else are to be, at least until such time as the labor leaders and industrialists in other industries or perhaps the leaders of farm organizations can counter the move by means of similar action.

In the case of such industries we need not be surprised if the federal government is confronted in the future as in the past with the necessity for intervening in the setting of prices and wages. Indeed, if it has seemed that the government has had to intervene in the past because management and labor leaders have *not* been able to agree, it may well be that government will have to intervene in the future because they *do* agree. If government did have to take over this sort of responsibility for the major sectors of our economy the effect upon the character of our economic system would be profound.

Fortunately, however, expressions like "The nation cannot exist half slave and half free" seem not to apply to our economic system. I repeat, that in this organizational economy of ours, competition in new and old forms does still play an enormously important role even though the changes from old-style competition and *laissez faire* have been fundamental. This organizational economy continues to function in spite of what seems each time to be irreconcilable conflicts between great power aggregates of capital and labor and in spite of recurrent general economic crises on a national and international scale.

The organizational economy functions as well as it does because prices do not have to be exactly those which on some two-dimensional demand and supply graph would exactly "clear the market." There is not for each worker some precisely determinable marginal productivity wage, any variation from which would throw the economy into disequilibrium and chaos. Nor does the allocation of resources have to be perfectly efficient or conform to that of some rigidly simplified model. Furthermore, particularly in a productive and technologically progressive economy like our own, the distribution of the benefits of some quasimonopoly price advantage among management, shareholders and laborers in an industry may be no more unjust nor more explosive as a

political-economic issue than the distribution of rents or of the income from private property in general.

It is fortunate that such rigidity and the necessity for such perfection do not exist. Since they do not, the potentiality exists for the evolutionary solution of the grave and complex question of whether and to what degree we shall have to depend upon new and old forms of competition, supported by antitrust legislation and enforcement, in comparison with the degree to which we must depend upon the development of governmental agencies for dealing with price and wage policies in industries in which competition can no longer be depended upon for their regulation.

The very fact that the managements of business corporations and the managements of labor unions have interests which are not identical with those of their stockholders on the one hand or of the rank and file membership of the unions on the other, affords an alternative channel of development. Both types of management may not be so adamant in the pursuit of the short-run interests of their constituencies as in the past and there is nowadays greater vulnerability to considerations of public relations. Consequently the consumer interest might be accorded some of the protection which it formerly received from competition.

It may well be that the system which I have called the "organizational economy" remains at least within gun-shot of what J. M. Clark designated as "workable competition." Certainly either term is esthetically superior to some such monstrosity as: "Competition, possessing tremendous survival value, always present somewhere and present almost everywhere in some degree, *cum* oligopoly or anyhow price leadership, often incomplete and/or intermittent, together with collective bargaining, in which economic power, always liable to become political, conceivably may countervail just enough but just as likely may countervail too little or too much, perhaps followed by governmental intervention and/or control." Such a monstrosity might, however, be more descriptive of our actual economic system than calling it by a shorter name.

Of far greater importance than what we call our economic system is the fact that, whatever the logical difficulties in analyzing it and in charcterizing it, this organizational economy has, up to now, served us far better both in terms of goods produced and in terms of human liberties preserved than has any other system, in any other country. In any event, I hope and believe we will understand it better after we have read the *Proceedings* of these meetings.

ECONOMIES OF SCALE, CONCENTRATION, AND THE CONDITION OF ENTRY IN TWENTY MANUFACTURING INDUSTRIES

By Joe S. Bain*

Ever since the merger movement of the late nineteenth century, American economists have been recurrently interested in the extent to which large size is necessary for business efficiency. Was the merger movement necessary; was the rule of reason economically justifiable; can this or that concentrated industry be atomized without loss of efficiency? These continue to be important questions to students of recent industrial history and contemporary antitrust policy. In the last three decades, with the notion that plant or firm size is related to efficiency formalized in long-run average-cost or scale curves, there has been much speculation and some inquiry concerning the shapes and positions of those scale curves in various industries and the placement of existing plants and firms on them.

To the economist qua economist, a knowledge for its own sake of the scale curves in particular industries is obviously unimportant. Only idle curiosity could justify his learning without further purpose how many barrels of cement a plant should produce to attain the lowest unit production cost, or how many passenger cars an automobile firm should make to minimize its production costs. But inferences which can be drawn from such knowledge may be important in several ways.

First, the proportion of the total output of its industry which a plant or a firm must supply in order to be reasonably efficient will determine the extent to which concentration in that industry is favored by the pursuit of minimized production costs. In any industry, the minimal scales of plant and of firm which are required for lowest production costs—*when these scales are expressed as percentages of the total scale or capacity of the industry* and are taken together with the shapes of the scale curves at smaller capacities—determine the degree of concentration by plants and firms needed for reasonable efficiency in the industry.

Second, the same relation of productive efficiency to the proportion of the market supplied by a plant or firm in any industry will have a

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profound effect on *potential competition*, or on the disposition of new firms to enter the industry. If a plant or firm needs to supply only a negligible fraction of industry output to be reasonably efficient, economies of scale provide no deterrent to entry other than those of absolute capital requirements. If, however, a plant or firm must add significantly to industry output in order to be efficient, and will be relatively inefficient if it adds little, entry at efficient scale would lower industry selling prices or induce unfavorable reactions by established firms, whereas entry at much smaller scales would give the entrant a significant cost disadvantage. In this situation established firms can probably raise prices some amount above the competitive level without attracting entry. In general, the "condition of entry"—measured by the extent to which established firms can raise price above a competitive level without inducing further entry—becomes "more difficult" as the ratio of the output of the optimal firm to industry output increases.[1]

Third, the amount of money required for investment in an efficient plant or firm—as determined by size—will affect the availability of the capital necessary for new entry. When the supplies of both equity and loan capital in the range needed for a unit investment are either absolutely limited or positively related to the interest rate, the number of dollars required to establish an efficient plant or firm will clearly affect the condition of entry to an industry.[2]

Finally, a comparison of the scales of existing plants and firms in any industry with the most efficient scales will indicate whether plants and firms are of efficient size, or whether or not the existing pattern of concentration is consistent with reasonable efficiency. Have plant and firm concentration proceeded too far, farther than necessary, just far enough, or not far enough—from the standpoint of productive efficiency? A knowledge of scale curves is prerequisite to an answer.

Although information on the relation of efficiency to scale thus has some importance, relatively little has been done to develop this knowledge through empirical research; economists have relied mainly upon *a priori* speculations and qualitative generalizations of the broadest sort. A popular American view is that economies of large-scale plant do exist—and that the efficiency of plants as large as are built may be conceded—but that further economies of large multiplant firms do not exist, or if they do, are strictly pecuniary in character and hence not to

[1] See J. S. Bain, "Conditions of Entry and the Emergence of Monopoly," *Monopoly and Competition and Their Regulation*, E. H. Chamberlin, ed. (London, 1954), for a development of this theory.

[2] But the absolute capital requirement for efficiency need not, as we move from one industry to another, be systematically related to the proportion of industry output needed for efficiency.

be sought or justified as a matter of social policy.[3] At the extreme it is argued that increasing the size of the firm beyond that of an efficient plant does not normally lower costs at all, so that the scale curve is approximately horizontal for some distance beyond this point. The dominant British view, expressed by such writers as Steindl, Florence, and E. A. G. Robinson, gives more credence to the alleged economies of large-scale firms. Both schools rely upon qualitative and substantially untested generalizations about productive and commercial techniques which supposedly determine the response of production costs to variations in the scale of plant or firm. Yet in spite of the extremely sketchy nature of this sort of knowledge, it is common to presume, for instance, that there are numerous examples of each of two sorts of oligopolistic industries—those where scale economies encourage a high concentration, and those where such economies do not but something else does.[4]

Direct empirical investigation has not added much to our knowledge of scale curves. The principal studies employing accounting cost data are found in TNEC Monograph No. 13, and in later work by J. M. Blair,[5] of the Federal Trade Commission. Unfortunately the industries studied have been so few, the periods of time reviewed so remote and brief, and the use and interpretation of the statistical data in most instances so open to question that no reliable generalization regarding scale curves can be drawn from this body of material. There is more available in the way of profit-rate data for firms of various sizes, but here the unsupported assumptions which are normally necessary to argue from higher profits to lower costs are so numerous as to vitiate any attempt to infer scale curves from profit rates. Somewhat more satisfactory information has been developed, for a very few industries only, through "engineering" estimates of the scale curve for plant or firm. But in general our information is such that we are ill-prepared to say much about actual scale curves and their implications.

I. *Scope of the Present Study*

In the course of a recent general study of condition of entry to American manufacturing industries,[6] it has been possible to develop

[3] See, *e.g.*, TNEC Monograph No. 13, *Relative Efficiency of Large, Medium-sized, and Small Business*, pp. 95-139.

It may be noted that the income-distribution effects of strictly pecuniary economies may not be inconsequential in many settings.

[4] See, *e.g.*, Fellner's "Case 1-a," "Case 1-b," and "Case 2" oligopolies, in his *Competition Among the Few* (New York, 1949) pp. 44ff.

[5] See *e.g.* "Technology and Size," *Am. Econ. Rev. Proceedings*, May 1948, XXXVIII, 121-52 and "Relation between Size and Efficiency in Business," *Rev. Econ. Stat.*, Aug. 1942, XXIV, 125-35.

[6] I wish to acknowledge the generous assistance provided for this study since 1951 by

some further data on economies of scale therein. The portion of this information presented here concerns, for each of twenty selected manufacturing industries: (1) the relationship of the output capacity of a plant of lowest-cost size to the output capacity of the industry, together with the shape of the plant scale curve at smaller sizes; (2) the relationship of the capacity of a firm of lowest-cost size to industry capacity, and the firm scale curve at smaller capacities; and (3) the absolute amount of money capital required to establish an optimal plant and an optimal firm as of the current decade.

These data have been developed almost entirely from managerial or "engineering" estimates supplied by certain firms in the industries involved; precisely, they reflect estimates of scale economies and capital requirements which were prepared, in response to detailed prearranged questioning, either by or at the direction of high-level executives in these firms. The general procedure for securing such data included: (1) a lengthy preliminary survey of each of the twenty industries, based on available monographs, documents, and other published and unpublished secondary materials; (2) the subsequent preparation for each industry of a separate, special, and rather lengthy series of questions designed to elicit certain information having bearing on the condition of entry; (3) securing, after explaining the project involved and assuring confidentiality of replies, an advance offer of cooperation in answering these questions from executives in a large number of firms; (4) actual submission of the questions, followed (except in those cases where cooperation was subsequently withdrawn) by obtaining answers, in writing or orally or both. The method used thus involved neither shot-gun dissemination of an all-purpose questionnaire nor post-prandial armchair quizzes, but rather a more or less hand-tooled questionnaire procedure in the case of each of twenty industries.

The questions submitted relative to scale economies in each industry were designed in general to elicit information concerning the minimal plant size requisite for lowest unit costs and the shape of the plant scale curve at smaller sizes, the same information for the firm, and the capital required to establish a plant and a firm of most efficient size. Direct and (with exceptions to be noted below) explicit answers to these questions were normally secured. In many cases, there was abundant evidence in the length and documentation of replies of a careful estimating procedure; in some, figures submitted were frankly characterized

the Merrill Foundation for the Advancement of Financial Knowledge, through a grant made to the Research Group on the Monopoly Problem at Harvard University, directed by Dean E. S. Mason. Acknowledgment is also due for the assistance in preceding years of the Bureau of Business and Economic Research, University of California, Berkeley, where essential initial background studies were undertaken.

as unsubstantiated armchair guesses, though in most of these the respondents were very well qualified to guess. By and large, the writer is inclined to feel, on the basis of checks against other sources and of comparisons of different and independent replies to the same questions, that this is generally a fairly reliable body of data, in which the bulk of individual industry estimates are likely to be fairly accurate. The data have the advantage, so far as they are reliable, of reflecting "engineering" estimates in the sense that they represent expert *ex ante* predictions of the net relations of cost to scale, rather than an *ex post* comparison of gross cost results at different achieved outputs. Thus they refer in general directly to scale curves as understood in economic theory.[7]

The twenty manufacturing industries studied may be designated as those producing cigarettes, soap, distilled liquor, shoes, canned fruits and vegetables, meat products, passenger automobiles, fountain pens, typewriters, flour, rubber tires and tubes, refined petroleum products, farm machinery, tractors,[8] steel, copper, cement, gypsum products, rayon, and metal containers. The sample was obviously not drawn at random. It was selected to obtain a maximum possible diversity of industry types consistent with the availability of data, but the fact that data have been more frequently developed for large and for highly concentrated industries than for others has resulted in some systematic differences between the sample and the whole population of manufacturing industries.

The following characteristics of the sample deserve brief note: First, it features large industries, with fifteen of the twenty having value products above a half billion in 1947. Whereas it includes only a little over 4 per cent of the total number (452) of manufacturing industries in 1947, it accounts for about 20 per cent of the value product of all manufacture in 1947.[9] Second, it contains a substantially larger proportion of moderately and highly concentrated manufacturing industries

[7] The general time reference of all estimates is the period 1950 to 1952. From two to five such estimates were received in each of the twenty industries in question. Other sources of data which were available for some industries—such as comparisons of accounting costs or the personal estimates of authors of industry studies—have been deliberately neglected here in order to give a more uniform consistency to the data presented. The only other data presented here, and these largely for expository purposes, are plant and firm concentration data prepared from the 1947 Census of Manufactures. Since the engineering estimates which supply the bulk of our data were generally secured under guarantees of secrecy as to source, no acknowledgments or references to source can be supplied.

[8] For present purposes only we follow the Census in the dubious experiment of segregating tractors from other farm machinery.

[9] The total population of industries described, as well as all data on value products and on concentration by firms, is derived (except as otherwise noted) from the 1947 Census of Manufactures, and in particular from a special analysis of concentration prepared from this Census and published as an appendix in *Hearings, Subcommittee on Study of Monopoly Power, Committee on Judiciary, H. R., 81st Cong., Serial 14, Part 2-B.*

than the total population. Nine industries of the sample had 75 per cent or more of value product controlled by four firms, three had 50 to 75 per cent so controlled, eight had from 25 to 50 per cent, and none less than 25 per cent controlled by four firms.[10] In the total population of manufacturing industries, the corresponding numbers in the four concentration classes were 47, 103, 164, and 138. This bias must be recognized in interpreting findings.

Otherwise, the sample is fairly representative. Eight industries are classed as making consumer goods, eight producer goods, and four goods bought by both producer and consumers. The outputs of eight are nondurable in use, whereas twelve are durable or semidurable. As to type of technique or process, five industries may be classified as engaged in processing farm products and four minerals, three as chemical industries, five as manufacturing or assembling mechanical devices, and three as in miscellaneous fabrication.[11]

II. *Optimal Plant Size and Plant Concentration*

Our first question concerns the shape and position of the plant scale curve (relating unit costs of production to the size of the individual factory or plant) in each of the twenty industries, and the apparent consequences of economies of large plants for entry and for seller concentration. We are interested initially in the scale curve reflecting the relation of production cost to the output or capacity of the plant *when the latter are expressed as percentages of the total output or rated capacity supplying the market to be supplied by the plant.* When output or capacity is expressed in these percentage terms, what is the lowest-cost or "optimal" size of plant and what is the shape of the plant scale curve at smaller sizes?

An initial clue to the potential importance of economies of large plants is supplied by certain data on plant size assembled in the 1947 Census of Manufactures. This Census shows for each of many industries the number of plants in each of several size-classes (size being measured by number of employees), and also the proportion of Census industry employment and of total industry "value added" accounted

[10] In three of the twenty cases, value added rather than value product figures were used by the Census in calculating concentration. For automobiles, registration rather than Census figures are followed in describing concentration, in both the sample and the total population, because of deficiencies in Census data.

[11] One further characteristic of the sample may be noted—Census industries have been selected which correspond fairly well to "theoretical" industries, or for which industry concentration as computed tends to reflect closely the relevant theoretical concentration of corresponding or component theoretical industries. This matter is discussed at length in J. S. Bain, "Relation of Profit Rate to Industry Concentration," *Quart. Jour. Econ.*, Aug. 1951, LXV, 297-304.

for by each size-class of plants. From these data[12] certain inferences can be drawn about the sizes of existing plants. For exploratory purposes here I have tried to develop from them some upper-limit estimates of the plant sizes requisite for greatest efficiency in the sample industries, by computing first the average size of plants in the largest size-class in each industry (expressed here as the percentage supplied per plant of the total value added of the Census industry), and second the maximum possible average size (similarly expressed) of the largest four plants in the industry.[13] If we neglect such obvious limitations as those of using value-added data, these estimates may be considered maximum percentages of the national industry outputs requisite for efficiency, on the grounds that in nearly every case we refer to the average size of a few of the largest plants actually built, and that the firms operating them were not restricted from building them to optimal scale. That is, they are generally multiplant firms which could bring a single plant to optimal scale before adding another, if indeed they did not in some cases duplicate optimal technical units on a single location.

The results of these estimating procedures are as follows: Eighteen industries were examined (automobiles and copper being eliminated because of gross deficiencies in Census data); for the eighteen the number of plants in the largest size-class lay between 3 and 15 in all but three cases; in those three it was large enough to make our estimates quite hazardous. The average share of Census industry value added supplied by plants in the largest size-class ranged from 20.1 per cent (typewriters) to 0.7 per cent (shoes), with a median at 3.8 per cent. The maximum possible average share of the largest four plants ranged from 19.1 per cent (cigarettes) to 1.7 per cent (shoes), with a median at 7.9 per cent.

The character of the data is more fully revealed in the frequency distributions in Table I. The first frequency column therein (f_1) classifies industries according to the market-share interval within which the average size of plants in the largest size-class of plants falls, market share being measured by the percentage of the Census industry value-added supplied by a plant. The second frequency column (f_2) shows the same information when the plant size referred to in each industry is the maximum possible average market share of the largest four plants.

[12] The data were previously used by the Federal Trade Commission for its study *The Divergence between Plant and Company Concentration, 1947*. The staff of the Commission has kindly made available its tabulated calculations on plant concentration as based on the Census data.

[13] The latter figure is derived in general by attributing to all but the first four plants in the largest size class the minimum possible market share (*i.e.*, for each the mean share of plants in the second size class) and by dividing the remainder of the total market share in the largest size class among the first four plants.

TABLE I.—CLASSIFICATION OF EIGHTEEN CENSUS INDUSTRIES ACCORDING TO PERCENTAGES OF INDUSTRY VALUES-ADDED SUPPLIED BY THE LARGEST PLANTS, 1947[a]

Percentage of Census Industry Value Added Supplied by the Average of the Largest Plants	Number of Industries with the Largest Plant Size in the Specified Percentage Interval	
	When "largest plant size" refers to average size of plants in largest size class of plants (f_1)	When "largest plant size" refers to the maximum possible average size of the largest 4 plants in indsutry (f_2)
0 – 2.4	6	2
2.5– 4.9	5	4
5.0– 7.4	2	3
7.5– 9.9	3	2
10.0–14.9	1	3
15.0–24.9[b]	1	4
Total	18	18

[a] From 1947 Census of Manufactures. The composition of sample is described in the text above.

[b] The highest value in this class was 20.1 per cent.

These findings, showing that in from seven to twelve of the 18 Census industries (depending on the method of estimate) the value added of the largest plants amounted to over 5 per cent apiece of total industry value added and that in from two to seven cases the figure was over 10 per cent apiece, suggest an importance for economies of large-scale plant which is substantial in some of these industries and small in others. But a detailed interpretation of the findings is not justified for several reasons. First, value added in a single year is a rather unsatisfactory measure of "scale" as that term is ordinarily understood. Second, the largest plants as identified by the Census may have resulted from building multiples of optimal technical units on single locations, and if so, the figures presented may overestimate optimal scales. Third, the data in question express the output of the plant as a percentage of the total national value added within the Census industry, whereas in fact the theoretical industry or separate market which a plant supplies may be somewhat smaller.[14] In these cases—where a Census industry is in fact made up of several theoretical industries corresponding to distinct regional markets or product lines—the "percentage-of-industry-output" derived from Census data for large plants is very likely to be below the theoretically relevant figure,[15] and revisions are in order. We

[14] It may also conceivably be larger, as in the case where imports are omitted from Census data or where the Census industry is too narrowly defined, but these contingencies are not realized in any important degree in this sample.

[15] It will be if the plant specializes as to area or product line.

TABLE II.—PROPORTIONS OF NATIONAL INDUSTRY CAPACITY CONTAINED IN SINGLE PLANTS OF MOST EFFICIENT SCALE, FOR 20 INDUSTRIES, PER ENGINEERING ESTIMATES CIRCA 1951

Industry	Percentage of National Industry Capacity Contained in One Plant of Minimal Efficient Scale	Industry	Percentage of National Industry Capacity Contained in One Plant of Minimal Efficient Scale
Flour milling	$\frac{1}{10}$ to $\frac{1}{2}$	Rubber tires and tubes[g]	3
Shoes[a]	$\frac{1}{7}$ to $\frac{1}{2}$	Rayon[h]	4 to 6
Canned fruits and vegetables	$\frac{1}{4}$ to $\frac{1}{2}$	Soap[i]	4 to 6
Cement	$\frac{4}{5}$ to 1	Farm machines, ex tractors[j]	4 to 6
Distilled liquors[b]	$1\frac{1}{4}$ to $1\frac{3}{4}$	Cigarettes	5 to 6
Petroleum refining[c]	$1\frac{3}{4}$	Automobiles[k]	5 to 10
Steel[d]	1 to $2\frac{1}{2}$	Fountain pens[l]	5 to 10
Metal containers	$\frac{1}{2}$ to 3	Copper[m]	10
Meat packing:[e]		Tractors	10 to 15
fresh	$\frac{1}{50}$ to $\frac{1}{5}$		
diversified	2 to $2\frac{1}{2}$		
Gypsum products[f]	$2\frac{1}{2}$ to 3	Typewriters	10 to 30

[a] Refers to shoes other than rubber.

[b] Capacity refers to total excluding brandy. Costs refer explicitly to 4-year whiskey, packaged but ex tax.

[c] Optimal balanced integration of successive processes assumed. Outshipment largely by water assumed; optimal scale may be smaller with scattered market and land shipment.

[d] Refers to fully integrated operation producing flat rolled products.

[e] Percentages are of total nonfarm slaughter; diversified operation includes curing, processing, etc.

[f] Combined plasterboard and plaster production assumed.

[g] Purchase of materials at a constant price assumed; production of a wide variety of sizes assumed.

[h] Refers to plant producing both yarn and fibre.

[i] Includes household detergents.

[j] Refers primarily to complex farm machines.

[k] Plant includes integrated facilities for production of components as economical. Final assembly alone—1 to 3 per cent.

[l] Includes conventional pens and ballpoints.

[m] Assumes electrolytic refining.

thus turn at once to direct engineering estimates of optimal plant sizes.

Table II reviews the engineering estimates of the optimal scales of plants for twenty industry groups. In each case, the plant size referred to is the minimal physical production capacity of plant required for lowest production costs, this capacity being expressed as a percentage of total national capacity within the Census industry. In each case also the costs referred to are total production costs, including costs of outshipment where the latter are strategic to the determination of optimal plant scale.

Table III summarizes the data of Table II by classifying industries

according to the market-share interval in which the mean estimated size of an optimal plant falls, when size is measured as a percentage of the national industry capacity. These "engineering" data seem generally more satisfactory than those previously developed from Census figures. They reflect rational calculations rather than historical happenstance, and designed plant capacities rather than transient additions to value of output, although they still reflect percentages of the national capacities of Census industries.

TABLE III.—CLASSIFICATION OF TWENTY INDUSTRIES ACCORDING TO PERCENTAGES OF NATIONAL INDUSTRY CAPACITIES CONTAINED IN SINGLE PLANTS OF MOST EFFICIENT SCALE

(from Table II)

Percentage of National Industry Capacity Contained in a Plant of Optimal Scale	Number of Industries with Optimal Scale Plant (per mean estimate) in the Specified Percentage Interval (f_3)
0– 2.4	9
2.5– 4.9	2
5.0– 7.4	4
7.5– 9.9	2
10.0–14.9	2
15.0–24.9	1
Total	20

It appears from them that in nine of the twenty industries an optimal plant would account for a quite small fraction of national capacity (under 2½ per cent), whereas in five others the fraction would run above 7½ per cent. In general, the industries with slight economies of scale of plant are engaged in processing of agricultural or mineral materials, whereas greater plant economies are frequently encountered in industries making mechanical devices. The engineering estimates of the importance of economies of large plant present an over-all picture for these industries not greatly different from that derived by calculating average plant sizes in the largest plant-size intervals (column f_1 of Table I), but they clearly ascribe less importance to such economies than the estimates of the maximum possible average sizes of the largest four plants in each of these industries (column f_2 of Table I).

Before we interpret these findings, however, two further matters must be discussed: the shapes of the plant scale curves at capacities short of the estimated optima, and the revisions in the estimates of optima which are needed if the division of Census industries into separate regions or product lines is recognized.

As to the shapes of plant cost curves at capacities short of the estimated optima, relatively fragmentary information has been received. In four industries the plant scale curve appears to be horizontal back to the smallest size considered, or ¼ per cent of national industry output; these are flour, shoes, canned fruits and vegetables, and "fresh" meat packing. In ten cases—steel, metal containers, diversified meat packing, gypsum products, farm machinery, automobiles, fountain pens, copper, tractors, and typewriters—quantitative estimates of the shapes of the plant cost curves are not available, although in some cases (*e.g.*, diversified meat packing and metal containers) it is suggested that substantially smaller than optimal plants would entail only slightly higher costs, whereas in some others (*e.g.*, typewriters, automobiles, and tractors) a distinct rise in costs is suggested at half the optimal plant scale. For the seven remaining industries, the estimated relation of production cost to plant scale is shown in Table IV, where costs of 100 represent the lowest attainable costs.

TABLE IV.—RELATION OF PRODUCTION COST TO PLANT SCALE IN SEVEN INDUSTRIES

	Percentages of National Industry Capacity in One Plant					
	5%	2½%	1%	½%	¼%	
Cement	100	100	100	115	130	Relative costs of production
Distilled liquor	100	100	100.5	101	102	
Petroleum refining	100	100	102	104	107	
Tires and tubes	100	100.3	103	104	105.5	
Rayon	100	107	125	Very high		
Soap	100	103	105	Above 105		
Cigarettes	100	101	102	Above 102		

A mixed picture again emerges. In some cases (liquor and cigarettes, for example) the rise of production costs at suboptimal scales is evidently quite small; in others (soap, petroleum refining, tires and tubes) it is moderate but by no means negligible; in some—*e.g.*, rayon and cement—the rise is great.[16] One might hazard the guess that in from a half to two-thirds of all the industries sampled the upturn of the plant scale curve at suboptimal scales is such as to discourage very much smaller operations unless there are forces counterbalancing production cost disadvantages. In the other one-third to a half of cases, a

[16] It will be noted that the industries with the highest degrees of plant concentration are generally those on which it has been most difficult to secure quantitative estimates of the shape of the scale curve. In general, our information on plant scales seems sketchier and perhaps less reliable at this end of the sample.

wide variety of plant sizes might prosper indefinitely in only slightly imperfect markets.

The findings of Tables II and III however—reflecting as they do the percentages of national Census industry capacities supplied by single plants—can hardly be taken at face value so long as the suspicion remains that many Census industries may be broken into several separate and largely noncompeting regional or product submarkets and that a plant may specialize in only one such submarket. In these cases the relevant measure of plant size must be the proportion of the capacity supplying a submarket which is provided by an optimal plant, and this proportion will be larger than the proportion of national capacity provided by the same plant.

In eleven of the twenty cases listed in Table II, a revision of plant-size figures is in order because of the apparent division of the national market into distinct submarkets, coupled with plant specialization among them. In seven of these cases—flour, cement, petroleum refining, steel, metal containers, meat packing, and gypsum products—the important segmentation of markets is geographical in character; national markets are broken into regions, and a single plant will mainly supply only one region. In the other four cases—shoes, canned fruits and vegetables, automobiles, and fountain pens—markets are divided to a significant extent among distinct product lines. In all cases, the relevant measure of plant size is the percentage it may account for of the total capacity supplying any submarket it may supply.

The industries in which market segmentation is important are predominantly those for which the percentages of national industry capacities represented by single plants are quite small. The data for nine of the first ten industries in Table II require revision because of market segmentation, and only two for which revision is required lie in the range of high plant concentration nationally. Where technology does not give some importance to plant economies in industries of our sample, geography and product specialization (by plants) apparently do. Correspondingly, revised plant-size data showing percentages of individual submarket capacities will differ markedly from those in Tables II and III.

To make the revision mentioned, the optimal plant capacity for each of the eleven industries involved has been restated first as a percentage of the capacity supplying the largest submarket identified, and second as a percentage of capacity supplying the smallest of the major submarkets identified. For example, four major regional markets were identified in the petroleum refining industry. The proportion of national capacity supplied by a single optimal refinery had been estimated at 1¾ per cent (Table II); the corresponding percentages for the largest

and smallest of the four major regional markets were 3⅓ per cent and 11½ per cent. In the fountain pen industry the proportion of aggregate national capacity supplied by an optimal plant was estimated at from 5 to 10 per cent. Dividing the market into high-price or gift pens and low-price pens including ballpoints (and recognizing differences in techniques for producing the two lines) the corresponding percentages become 25 to 33⅓ per cent and 10 to 12½ per cent.

When these revisions have been made for the eleven industries, and the results combined with the unrevised data for the remaining nine, we are prepared to present two frequency distributions parallel to that in Table III above. They classify industries according to the percentage of market capacity provided by an optimal plant, in the first case (column f_4 of Table V) when the capacities of optimal plants in the eleven revised industries are expressed as percentages of the total capacities supplying the largest submarkets in their industries, and in the second (column f_5) when optimal capacities in the eleven industries are expressed as percentages of the total capacities supplying the smallest major submarkets identified. The last column in Table V repeats column f_3 from Table III for purposes of comparison.

Subjective judgments have inescapably influenced the content of

TABLE V.—CLASSIFICATION OF TWENTY INDUSTRIES[a] BY PERCENTAGES OF INDIVIDUAL MARKET CAPACITIES CONTAINED IN A SINGLE-PLANT OF MOST EFFICIENT SCALE

Percentage of Individual Market Capacity Contained in a Plant of Optimal Scale	Number of Industries with Optimal Plant Scale in the Specified Percentage Interval		
	Where percentage is that of the total capacity supplying the largest recognized submarket (f_4)	Where percentage is that of the total capacity supplying the smallest recognized submarket (f_5)	Where percentage is that of the total capacity supplying the national market (f_3 from Table III)
0– 2.4	4	2	9
2.5– 4.9	5	2	2
5.0– 7.4	5	4	4
7.5– 9.9	0	1	2
10.0–14.9	5	3	2
15.0–19.9	0	2	0
20.0–24.9	1	2	1
25.0–29.9	0	2	0
30.0–34.9	0	1	0
35.0–40.0	0	1	0
Total	20	20	20

[a] The meat packing industry is considered for purposes of this table as only involving so-called *fresh* meat packing.

columns f_4 and f_5, particularly in the identification of regions, the decision as to what is a "major" region or product line, and the decision as to whether market segmentation is significant, but we have tried to follow available information and industry practice systematically. If there is a bias, it is in the direction of defining areas and product lines quite broadly, of considering only a few dominant areas for analysis, and of recognizing segmentation only if there is strong evidence supporting the recognition.

Interpreting Table V with appropriate reference to the earlier discussion of the shapes of plant scale curves, we may emphasize the following conclusions about the importance of economies of large-scale plants within the industries of our sample. First, if the reference is to the largest submarkets of industries with segmented markets (plus the national markets of those with unsegmented markets), then in nine of the twenty cases an optimal plant would supply less than 5 per cent of its market, and in five additional cases less than 7½ per cent. If this is true and if, further, the plant-scale curve is usually fairly flat for a moderate range of suboptimal scales, then in many of these fourteen cases the scale requirements for an optimal plant should not provide a serious deterrent to entry. A firm constructing one reasonably efficient plant should not ordinarily induce serious repercussions from established firms in its market.

On the other hand in six cases—gypsum products, automobiles, typewriters, fountain pens, tractors, and copper—the proportion of the total capacity supplying either the national market or the largest submarket which is provided by a single optimal plant runs from 10 to 25 per cent. Precise data are largely lacking on the shapes of scale curves in these industries, but if they are much inclined upward at suboptimal scales (as is suggested qualitatively in several cases) then the economies of large plant should provide a very significant deterrent to entry to the markets in question. Further, a substantial degree of oligopolistic concentration by firms might easily be justified by the pursuit of plant economies alone. The substantial diversity of situations among industries of moderate to high concentration deserves considerable emphasis.

The picture changes markedly if our attention shifts in the case of the eleven segmented industries from the largest to the smallest major submarkets. Now we find that in eleven of the twenty cases (rather than six) the proportion of the relevant market capacity supplied by an optimal plant exceeds 10 per cent, and in six cases it exceeds 20 per cent. Plant economies sufficient to impede entry very seriously are potentially present in half or more of the cases, and high plant and firm concentration is encouraged by technology. The importance of plant economies thus potentially bulks large indeed in the smaller regional

submarkets and the smaller product lines, whereas it is evidently less in the major submarkets and frequently so in the industries with relatively unsegmented national markets.

III. *Optimal Firm Size and Firm Concentration*

The extent to which further economies of large scale are realized if firms grow beyond the size of a single optimal plant has been a subject of controversy among economists. If a distinction is drawn between "production cost" and other advantages of scale—so that sales promotion, price-raising, and similar advantages of big firms are properly distinguished from cost-savings in production and distribution—there is no general agreement among economists as to whether or to what extent the multiplant firm is more economical.[17] It thus may come as no surprise that business executives questioned on the same matter with regard to our sample of industries evidenced a similar diversity of mind. Very distinct differences of opinion relative to the existence or importance of economies of multiplant firms were frequently encountered in the same industry, and in a pattern not satisfactorily explicable in general by the hypothesis that the individual would claim maximum economies for his own size of firm. Any findings presented here on estimates of economies of large-scale firm should thus be viewed as extremely tentative.

Whatever the ostensible importance of economies of the multiplant firm, exploitation of them will not *necessarily* require the multiplant firm to control a larger proportion of any submarket than is needed for one optimal plant. In those instances where national markets are segmented regionally or by product lines, the multiplant firm *may* realize its economies while operating only one plant in each submarket. Then concentration by firms in individual submarkets is not further encouraged and entry is not further impeded[18] by economies of the multiplant firm. An optimal cement plant may supply about 1 per cent of national capacity, or percentages of regional capacity ranging very roughly from 5 to 30 per cent in eleven regional submarkets. The fact that a multiplant cement firm could secure lower costs than a single-plant firm by operating one optimal plant in each of the eleven regions —thus accounting for 11 per cent of national capacity—would not imply that it need have a higher proportion of capacity in any one region than a single-plant firm of optimal size. Except for an increase in absolute capital requirements, the assumed economies of the multi-

[17] This disagreement is, as noted above, complicated further by difference of opinion as to whether the disputed economies are real or strictly pecuniary in character.

[18] Except for the increase of absolute capital requirements.

TABLE VI.—THE EXTENT OF ESTIMATED ECONOMIES OF MULTIPLANT FIRMS IN 20 MANUFACTURING INDUSTRIES

Industry	Percentage of National Industry Capacity Contained in One Optimal Plant	Estimated Extent of Multiplant Economies (as a percentage of total cost)	Percentage of National Industry Capacity Contained in One Optimal Firm	Average Percentage Share of the National Market of First 4 Firms in 1947[a]
Group 1:				
Canned fruits and vegetables	$\frac{1}{4}$ to $\frac{1}{2}$	None	—	6.6
Petroleum refining	$1\frac{3}{4}$	None	—	9.3
Meat packing:[b]				
Fresh	$\frac{1}{50}$ to $\frac{1}{5}$	None	—	—
Diversified	2 to $2\frac{1}{2}$	None	—	10.3[c]
Fountain pens	5 to 10	None	—	14.4
Copper	10	None	—	23.1[d]
Typewriters	10 to 30	None	—	19.9
Group 2:				
Flour	$\frac{1}{10}$ to $\frac{1}{2}$	No estiamte	—	7.3
Distilled liquor	$1\frac{1}{4}$ to $1\frac{3}{4}$	No estimate	—	18.7
Metal containers	$\frac{1}{2}$ to 3	No estimate	—	19.5
Tires and tubes	3	No estimate	—	19.2
Rayon	4 to 6	No estimate	—	19.6
Farm machines, ex tractors	4 to 6	No estimate	—	9.0
Automobiles	5 to 10	No estimate	—	22.5[e]
Tractors	10 to 15	No estimate	—	16.8
Group 3:				
Shoes	$\frac{1}{7}$ to $\frac{1}{2}$	Smal!, or 2 to 4	$\frac{1}{2}$ to $2\frac{1}{2}$	7.0
Cement	$\frac{4}{5}$ to 1	Small, or 2 to 3	2 to 10	7.4
Steel	1 to $2\frac{1}{2}$	2 to 5	2 to 20	11.2[c]
Gypsum products	$2\frac{1}{2}$ to 3	Small	27 to 33	21.2
Soap	4 to 6	$\frac{1}{2}$ to 1	8 to 15	19.8
Cigarettes	5 to 6	Slight	15 to 20	22.6

[a] Market shares are average percentages of 1947 national values of shipments unless otherwise indicated.

[b] Plant percentages refer to total of nonfarm slaughter, firm percentages to wholesale fresh meat packing only.

[c] Expresses average percentage of total value added rather than value of shipments.

[d] Expresses average percentage of electrolytic plus other national copper refining capacity, 1947.

[e] Expresses approximate average percentage of total 1951 passenger car registrations.

plant firm would not encourage regional market concentration or impede entry.

Suppose on the other hand that there are economies of multiplant firms which are to be realized through operating two or more optimal-size plants either in a single submarket or in a single unsegmented

national market. This will evidently encourage a concentration by firms in the relevant submarket or national market greater than that encouraged by plant economies alone, and will further impede entry. If a single plant of most efficient size would supply 5 per cent of the relatively unsegmented national cigarette market, whereas a single firm operating three such plants could lower costs of production and distribution perceptibly, economies of the multiplant firm would favor greater effective concentration and provide further deterrents to entry to the cigarette industry.

Findings relative to the economies of multiplant firms, together with certain related data, are presented in Table VI. The second column therein repeats the estimates of percentages of national Census industry capacities required for optimal plants, from Table II. The third column indicates the estimated extent of economies of multiplant firms (*i.e.*, firms of sizes beyond those of single optimal plants), costs of distribution but not of sales promotion being included. The fourth column indicates the percentages of national industry capacities required for firms with lowest production plus distribution costs, while the final column shows the average percentage per firm of the national market supplied by the first four firms in 1947. The last provides a measure of actual concentration by firms. The estimates in question are entirely those of executives queried in connection with the investigation underlying this study.

The data presented in Table VI shed light on two questions: (1) to what extent do the economies of the multiplant firm tend to enhance concentration and impede entry, and (2) to what extent is the existing concentration by firms greater than required for exploitation of economies of large plants and of large firms?

Concerning the first question a varied picture appears. In eight industries (Group 2 in Table VI) no definite estimate could be obtained of the extent, if any, of economies of the multiplant firm. This is in spite of the fact that in most of these industries the degree of concentration by firms substantially exceeds that requisite for exploitation of estimated economies of the large plant. In six industries (Group 1 in Table VI) it was the consensus that economies of the scale of firm beyond the size of a single optimal plant were either negligible or totally absent. In these cases estimated cost savings of the multiplant firm cannot justify concentration beyond that required by plant economies alone (either in submarkets or in unsegmented national markets) nor can they make entry any more difficult than it is already made by plant economies. With respect to the first four industries in the group, a multiplant firm with plants in several regions or product lines would, according to the estimates received, realize no net cost savings by

virtue of this aspect of its organization. In the second three industries in this group, however, economies of the large plant alone are sufficient to support a high degree of concentration by firms and to impede entry.

In the remaining six industries (Group 3 in Table VI) perceptible economies were attributed to the multiplant firm. The extent of these economies is in no case huge, being characterized as slight or small in three cases and as in the two to five per cent range in the remaining three. Nevertheless, two or three percentage points on total cost can be significant in any industry if the ratio of operating profits to sales is not beyond five or ten per cent and if product differentiation and other market imperfections are not dominant. What further tendency toward concentration and what further impediment to entry would the existence of these economies imply?

The optimal multiplant firm as estimated in Group 3 of Table VI includes two or three optimal plants in the soap industry, three or four in the cigarette industry, four or five in the shoe industry, and about ten in the gypsum products industry. Estimates for the steel and cement industries run all the way from one or two to ten plants per optimal firm, and the range of disagreement among authorities is wide. Applying these estimates, the proportion of national industry capacity needed for best efficiency in a multiplant firm is raised; but is the proportion of the capacity supplying any particular regional or product submarket also raised? It will not be if the efficient multiplant firm includes only one optimal plant per submarket, and it will be if it includes two or more per submarket or if the national market is unsegmented.

In Group 3 in Table VI no more than one optimal plant per region is attributed to the optimal firm in cement or in steel, and the proportion of any regional market which need be supplied for efficiency is thus not increased by the incidence of economies of the multiplant firms. In the remaining four cases the conclusion is different. Soap and cigarettes have relatively unsegmented national markets, and the proportion of the market required for best efficiency is doubled, trebled, or quadrupled by the emergence of economies of the multiplant firm. In shoes the assumed specialization to a single product line of the four or five plants needed for efficiency raises the requisite firm concentration by product lines by corresponding multiples. In the gypsum industry it was evidently assumed that an optimal firm would operate several plants in each of one or more major regions. In all of the last four cases, therefore, economies of the multiplant firm encourage greater effective concentration by firms and impede entry. But in these cases (possibly excepting shoes) the economies of the large firm were characterized as slight, so that the effects just listed may be weak.

With respect to the effect of the economies of multiplant firms on

concentration and on entry, these conclusions appear. In eight of twenty industries in our sample, no estimate was obtained of the extent of these economies. In two-thirds of the remaining cases, economies of the multiplant firm were held either to be absent, or to take such a form that exploitation of them would not require higher proportions of market control by the firm in any submarket. In one-third of the remaining cases, some encouragement to higher concentration by firms in submarkets was provided, but it was a small encouragement in view of the generally slight economies attributed to the large firm. Economies of the large-scale firm apparently do not represent a major force encouraging concentration or deterring entry in this sample of industries. The data on which this guess rests, however, are far from adequate.

Our second question concerns the extent to which the existing degree of concentration by firms within industries is justified by the estimated economies of large plants and firms. This is a rather complicated question, and may be broken down into three subquestions: (1) Is the existing concentration by firms for national Census industries justified by the economies of single large-scale plants? (2) If not, is the existing concentration by firms nevertheless consistent with no higher concentration within individual submarkets than is required by a single efficient plant—*i.e.*, need there be more than one optimal plant per large firm in any one submarket? (3) In any case, to what extent is the multiplant character of large firms apparently justified by the economies of such firms?

A first approximation to answers to these questions may be made by taking the concentration figure in Column 5 of Table VI as a simple and crude measure of national industry concentration by firms.[19] On the basis of this measure, the answer to the first subquestion is simple and unsurprising—concentration by firms is in every case but one greater than required by single-plant economies, and in more than half of the cases very substantially greater. Generally it is only within some of the industries with very important economies of large plant—*e.g.*, fountain pens, copper, typewriters, autos, tractors, farms machines—that concentration by firms has not been much greater than required by single-plant economies. Even in these cases it may be two or three times as great as thus required. In the other cases concentration by firms tends to be a substantial or large multiple of that required by single-plant economies. Remembering that we are dealing in general in this sample with the more concentrated industries, it might be said in summary that nearly all of the industries tended to become moderately or

[19] The average share of national industry output per firm for the first four firms obviously is smaller than the market share for the first firm, larger than that for the fourth firm, etc.

highly concentrated (by firms) whether economies of the single plant were important or not.

The second subquestion is whether the existing degree of concentration by firms is consistent or inconsistent with the existence of a single optimal plant per firm in each recognized submarket. In seven of the nine cases where the national market has been considered substantially unsegmented—copper, typewriters, liquor, tires and tubes, rayon, farm machines, tractors, soap, and cigarettes—the degree of concentration by firms within a single market is greater than required by such plant economies, although in all but two of the seven cases (liquor and tires and tubes) it is greater by at most a multiple of three or four. This last is found probably in part because economies of the large plant seem very important in most of these industries.

In eight of the remaining eleven cases—canned goods, petroleum refining, meat packing, fountain pens, metal containers, cement, steel, and gypsum products—the degree of national concentration by firms is not grossly inconsistent with the larger firms on the average having but a single optimal plant per submarket in each of several submarkets. *(This is certainly not to deny that the largest single firms may have more than this and probably do; we refer only to the average of the largest four firms.)*

In the last three cases—flour, automobiles, and shoes—the degree of concentration by firms exceeds by a multiple of two or three that required for each of the four largest firms on the average to have an optimal plant in each submarket. In general, our showing is that in ten of twenty industries the existing degree of concentration by firms, as measured by the average size of the largest four firms, is significantly greater than required for these firms to have only one optimal plant per submarket; in the other ten cases concentration is at least roughly consistent with such a condition.

The third subquestion concerns the extent to which the existing degree of concentration by firms is justified by the exploitation of economies of multiplant firms. We will go no further with this question here than a comparison of the fourth and fifth columns of Table VI will take us. In Group 1 in that table, the alleged absence of any economies of multiplant firm implies that there is no justification in terms of costs for the excess of concentration by firms over that required for single efficient plants, although in one case (typewriters) the existence of an excess is uncertain, and in four others (all but copper) it is not necessarily accompanied by accentuated concentration in individual submarkets. Here, therefore, the lack of an evident cost justification for multiplant firms raises not so much the issue of concentration in separate markets as the issue of the other advantages

and disadvantages of a diversified firm operating in each of several related submarkets.

In Group 2 no estimates of multiplant economies are available; we need say no more than that in five of eight cases (excluding metal containers, farm machines, and tractors) there is a concentration by firms much greater than that required for efficient plants in each submarket, and that this requires evaluation from a cost standpoint. In only one of the industries in Group 3 (shoes) does the degree of concentration by firms seem to have clearly exceeded that required for economies of production and distribution by the large firm.

In the sample as a whole the existing degree of concentration by multiplant firms lacks a clear cost justification in perhaps thirteen of twenty cases, although in seven of these we have a simple lack of any definite estimates. In two more cases the multiplant phenomenon is not very important. Further information is needed on this matter, particularly with reference to cases in which multiplant firm organization has increased effective concentration in individual submarkets or in unsegmented national markets.

IV. *Absolute Capital Requirements and Entry*

The effect of scale economies on the condition of entry so far emphasized is transmitted through their influence on the share of market output which an efficient plant or firm will supply. This impact is important, but it is not proportional to the importance of scale economies measured in such terms as the absolute number of employees or the absolute size of investment required for an optimal plant or firm. This is because the proportion of a market supplied by an optimal plant or firm (which determines the degree of oligopolistic interdependence between the potential entrant and established firms) depends not only on the absolute size of the plant or firm but also on the size of the market. Thus an investment of over $200 million dollars might add only one per cent to national steel capacity, whereas an investment of $6 million might add five or ten per cent to the capacity for producing fountain pens. In addition to the effect of scale economies on entry via the proportion of the market an efficient entrant will supply, there is a distinct and not closely correlated effect via the absolute size of the efficient plant or firm, or, to choose a popular measure, via the total money investment needed to establish such a plant or firm.

To determine the importance of scale economies in establishing sufficient capital requirements to impede entry seriously, we have queried the same sources on the investment requisite for the most efficient plant or firm in the twenty industries sampled. The findings relative to capital requirements for the large plant are fairly compre-

TABLE VII.—ESTIMATED ABSOLUTE CAPITAL REQUIREMENTS FOR PLANTS OF ESTIMATED MOST EFFICIENT SCALE, CIRCA 1951, FOR 20 INDUSTRIES

Industry	Percentage of National Industry Capacity Provided by One Efficient Plant (from Table II)	Total Capital Required for One Efficient Plant[a]
Category 1:		
Flour milling	$\frac{1}{10}$ to $\frac{1}{2}$	$700,000 to $3,500,000
Shoes	$\frac{1}{7}$ to $\frac{1}{2}$	$500,000 to $2,000,000
Canned fruits and vegetables	$\frac{1}{4}$ to $\frac{1}{2}$	$2,500,000 to $3,000,000
Cement	$\frac{4}{5}$ to 1	$20,000,000 to $25,000,000
Distilled liquor	$1\frac{1}{4}$ to $1\frac{3}{4}$	$30,000,000 to $42,000,000
Petroleum refining	$1\frac{3}{4}$	$193,000,000 ex transport facilities
		$225,000,000–$250,000,000 with transport facilities
Meat packing[b]	$\frac{1}{50}$ to $\frac{1}{5}$	Very small
	2 to $2\frac{1}{2}$	$10,000,000 to $20,000,000
Tires and tubes	3	$25,000,000 to $30,000,000
Category 2:		
Steel[c]	1 to $2\frac{1}{2}$	$265,000,000 to $665,000,000[d]
Metal containers[c]	$\frac{1}{2}$ to 3	$5,000,000 to $20,000,000
Rayon	4 to 6	$50,000,000 to $75,000,000[e]
		$90,000,000 to $135,000,000[f]
Soap	4 to 6	$13,000,000 to $20,000,000[g]
Farm machines ex tractors	4 to 6	No estimate
Cigarettes	5 to 6	$125,000,000 to $150,000,000
Category 3:		
Gypsum products[h]	$2\frac{1}{2}$ to 3	$5,000,000 to $6,000,000
Automobiles	5 to 10	$250,000,000 to $500,000,000
Fountain pens	5 to 10	Around $6,000,000
Copper	10	No estimate
Tractors	10 to 15	Around $125,000,000
Typewriters	10 to 30	No estimate

[a] These estimates generally exclude anticipated "shakedown losses" of new entrants, which in some cases may be large and prolonged.

[b] The two rows of estimates refer alternatively to fresh and diversified meat packing.

[c] Percentage of an efficient plant in the largest regional market may exceed 5 per cent.

[d] Excludes any investment in ore or coal.

[e] Acetate rayon.

[f] Viscose rayon.

[g] Excludes working capital.

[h] Percentage of an efficient plant in the largest regional market may exceed 10 per cent.

hensive, and are summarized in Table VII. Column 2 of this table shows the estimated percentage of national industry capacity provided by one efficient plant, and Column 3 the total investment required to establish such a plant (ordinarily including working capital) as of about 1951.

The industries are grouped according to the importance of scale economies from the previously emphasized percentage standpoint. The first category of industries are those in which a single efficient plant will supply no more than 5 per cent of the largest submarket or unsegmented national market; the second includes those where the corresponding percentage is 5 to 10 per cent; the third includes those where the percentage is above 10 per cent. We may thus observe the extent to which the "percentage effect" of scale economies is of the same order as their "absolute capital requirement effect."

The findings in Table VII speak fairly clearly for themselves, but a few comments may be in order. First, there is no evident correlation of the absolute capital requirements for an efficient plant with the percentage of market output supplied by it. The size of the market is an erratic variable forestalling such a correlation. Second, absolute capital requirements for an efficient plant in all the manufacturing industries examined are large enough to restrict seriously the ranks of potential entrants; even 500,000 dollars, the smallest amount listed, will not be forthcoming from savings out of salary or from the winnings in a poker game.

Third, the absolute capital requirements in some cases reinforce but in other cases weaken the "percentage effect" on entry of economies of scale of plant. For each of the eight industries in Category 1 in Table VII, for example, the percentage of market output supplied by a single plant seems small enough to provide no serious-deterrent to entry. In three of these cases—flour milling, shoes, and canned goods[20]—the absolute capital requirements are also so small that entry may not be seriously restrained thereby. But in four others, capital requirements ranging from 10 to 42 million dollars per plant provide a greater deterrent, and in one (petroleum refining) they impose a truly formidable barrier.

In the six industries of Category 2, where the "percentage effect" on entry of economies of scale of plant is moderate, it is strongly reinforced in four cases (possibly excepting metal containers, and farm machines, for which there is no estimate) by absolute capital requirements. The effect is very much increased in both the steel and cigarette industries. In the six industries of Category 3, where the "percentage effect" appears quite important, it is strongly reinforced in the cases of automobiles and tractors by absolute capital requirements, but in the fountain pen and gypsum industries capital requirements are relatively small. Thus a generally mixed picture regarding the dual effects of economies of large plant emerges.

[20] As well as in fresh meat packing.

The extent to which economies of multiplant firms as already noted increase the capital requirements for efficiency may be readily ascertained by comparing the findings of the Table VI with those of Table VII. Since the existence of such economies was denied in six industries, not estimated in eight others, and held to be slight in at least half the remaining six, detailed comment on this matter does not seem justified.

V. *Conclusions*

When the answer provided by empirical investigation to an initial inquiry concerning the values of certain economic data is that the values are highly irregular and variegated, and when the answer is therefore found only in a great array of numbers, any brief summarization of the findings may be difficult to make and misleading if attempted. Since this situation is encountered with respect to each of the major questions posed at the beginning of this paper, no comprehensive summary of findings will be attempted here. Certain salient conclusions may be restated briefly, however, in each case with the proviso that they may have general validity only so far as the sample of industries selected is generally representative of moderately to highly concentrated manufacturing industries in the United States.

Regarding the importance of economies of large plants, the percentage of a market supplied by one efficient plant in some cases is and in some cases is not sufficient to account for high firm concentration or to impede entry. Where it is, these economies might easily propagate high concentration and serious impediments to entry; the number of cases where it is sufficient increases as we refer to the smaller regional or product submarkets in various industries. A significant corollary of these findings is that the following popular horseback observations are apparently *not true:* that economies of scale of plant are never or almost never important in encouraging oligopoly or impeding entry, and that such economies always or almost always are important in these ways. The picture is not extreme in either direction and not simple.

The economies of large plants frequently erect formidable barriers to entry in the shape of absolute capital requirements. Moderately to very high barriers of this sort were found in all but four or five of the industries studied. The height of such barriers is not clearly correlated with percentage of the market supplied by a single plant, so that a relatively independent influence on entry is discovered.

The economies of large multiplant firms are left in doubt by this investigation. In half the cases in which definite estimates were received, such economies were felt to be negligible or absent, whereas in most of the remainder of cases they seemed slight or small. Perhaps the frequently expressed suspicion that such economies generally are

unimportant after all is supported, and perhaps we are justified in saying that we have had difficulty in accumulating convincing support for the proposition that in many industries production or distribution economies of large firms seriously encourage concentration or discourage entry.

Our reference here has of course been strictly to the effect of the size of the plant or firm on the cost of production and distribution, and thereby on entry and on concentration. Needless to say, parallel studies of other factors bearing on entry, including the effects of scale on price and on sales promotion, are required for a full evaluation of the entry problem.

ECONOMIC PRECONCEPTIONS AND THE FARM POLICY

By J. K. GALBRAITH*

On farm policy, in recent times, there has been a remarkable divergence between the weight of scholarly recommendation and the course of practical action. In the years since World War II, it seems clear, the policy of providing firm price guarantees for farm products has gained markedly in political favor.[1] As recently as five years ago it was widely assumed that this policy would be discontinued as soon as the psychological transition to peacetime conditions had been completed and the opposition of some intransigent friends of the so-called "high and rigid" supports had been overcome. The policy can no longer be viewed as temporary. It has won the advocacy of a body of legislators of both parties who are formidable both in numbers and power. They clearly have on their side an important sector of farm opinion despite the formal opposition, so far, of two of the three national farm organizations.[2] During the presidential campaign of 1952 both candidates committed themselves, for the immediate future, to price supports at present levels and to the extension of protection to products not now covered. The popularity of price supports has clearly impressed a Secretary of Agriculture who has not concealed his personal distaste for the policy and his hope that it might be abandoned.[3]

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[1] Under legislation expiring in 1954, support of prices at 90 per cent of parity is mandatory for six so-called basic commodities—corn, cotton, wheat, tobacco, rice and peanuts. Support is also mandatory but within a price range below 90 per cent of parity for a few more products, of which the most important are dairy products and wool and mohair. Other farm products may be supported at the discretion of the Secretary of Agriculture, and under this authority, which of late has been used rather sparingly, a limited number of other products (principally feeds and vegetable oil products) have been receiving formal support.

[2] The American Farm Bureau Federation and the National Grange have, so far, opposed the inflexible support prices at 90 per cent of parity. Only the smaller and more regional Farmers' Union supports the policy. However, it has been evident for some time that the Farm Bureau, especially in the South, does not have the full concurrence of its state units on this issue, and presidents of State Federations have appeared before Congressional committees in opposition to the position taken by the national organization.

[3] In his first press conference, in what may not have been the happiest choice of words, Secretary Benson expressed the belief that price supports should be used only to protect the farmer from "undue disaster." Amplifying this later at St. Paul, he said, "Price supports should provide insurance against disaster and help stabilize national food supplies. But price supports which encourage uneconomic production and result in continuing heavy surpluses and subsidies should be avoided."

In sharp contrast with the growing popularity of the policy has been the position of the economists who have spoken on this subject. Criticism of the policy would hardly be remarkable. What is remarkable is the unanimity with which this policy has been condemned by the professional students who have spoken on the subject. There have been almost literally no expressed partisans of the fixed guarantees. In the current climate of professional attitudes approval of the present farm policy, one senses, would be not alone exceptional but eccentric.

It follows that the literature in opposition to the present policy is nearly coextensive with the writing on agricultural policy. Thus toward the end of the war a committee designated by the Association of Land Grant Colleges and Universities urged the liquidation of wartime price guarantees, the precursors of the present support prices.[4] Such fixed price guarantees were almost uniformly criticized and rejected by the prize-winning essays in the contest on postwar farm price policy conducted by the American Farm Economic Association.[5]

More recently, in a strongly argued brief, the present policy has been unequivocally condemned by a committee of thirteen distinguished agricultural economists which included the present and seven past presidents of the American Farm Economic Association.[6] The economists find the present policy inconsistent with general economic welfare, specifically damaging to low-income consumers and, among other faults to be mentioned presently, a threat to the freedom of decision of farmers. They urge its total abandonment and the re-establishment of "flexible prices based on open market demand and on free competition, not price controls."[7]

I. *The Case Against the Policy*

The economists who have spoken on the subject have not only been nearly unanimous in their objection to the present farm policy, but they have also been comprehensive in their criticism. The policy is credited with few or no good effects. To it is attributed a variety of unfavorable consequences all of them extremely serious.

[4] Committee on Postwar Agricultural Policy, *Postwar Agricultural Policy* (Oct. 1944).

[5] Published in the *Jour. Farm Econ.*, Nov. 1945, XXVII, 743-902.

[6] *Turning the Searchlight on Farm Policy*, hereafter cited as *Searchlight* (The Farm Foundation, Chicago, 1952). The authors were O. B. Jesness, University of Minnesota; George H. Aull, Clemson Agricultural College; M. R. Benedict, University of California; E. L. Butz, Purdue University; T. K. Cowden, Michigan State College; F. F. Hill, Cornell University; Asher Hobson, University of Wisconsin; L. J. Norton, University of Illinois; T. W. Schultz, University of Chicago; Henry B. Arthur of Swift and Co.; Frank L. Parsons of the Federal Reserve Bank of Minneapolis; Edwin G. Nourse; and Frank J. Welch of the University of Kentucky.

[7] *Ibid.*, p. 80. This last comment provoked a dissent from Dean Welch in such terms as would indicate substantial reservations in his case on other conclusions.

The most common and probably the most telling criticism of the policy is that of its assumed effect on resource allocation and therefore on the efficiency with which economic resources are employed.[8] There are two parts to this indictment: first, the support prices interfere with price movements and therewith, it is held, in a damaging way with optimal resource allocation within the agricultural industry; and, second, they are condemned for interfering with the movement of resources between agriculture and nonagricultural enterprise and, in particular, for holding unneeded labor in farming. The effect on resource allocation within agriculture is regarded with particular alarm, an emphasis that may be attributed, at least in part, to the persuasive work of Professor Theodore W. Schultz. He has shown that price influences may not be dominant in the distribution of labor and capital between agricultural and nonagricultural enterprise[9] and that "The movement of workers in and out of agriculture has been inconsistent with our economic *rationale* as to what people do (in the short run) in adjusting to changes in relative prices of products."[10] But he has compensated for this seeming slight to the price system with a powerful exposition of the role of relative prices in adjusting resource use within agriculture. "Income-stabilizing programs are too heavy a burden for the pricing system to bear if it is to function efficiently in guiding agricultural production."[11] However, alarm over the effect of support prices on resource movement in and out of agriculture has by no means disappeared. The committee of economists above cited (rather curiously with Schultz's concurrence) states that the subsidy, inherent in the use of support prices, inhibits the movement of resources and the equalization of factor returns between agricultural and nonagricultural enterprise[12] and that "a support program above real market prices tends to tie down resources that should be moving out to non-agricultural uses. . . ."[13] The consequences are clearly deemed to be grave.

Next to its effect on allocative efficiency, the most sharply articulated criticism of the present farm policy concerns its relation to foreign trade policy. For export crops, the support of prices above world levels must be offset by subsidies if the crop is to continue to move in international

[8] This criticism will be recognized as implicit in the commonplace assertion that support prices prevent or retard needed adjustments in agriculture or stop desirable production shifts. *Cf.* the quotation from Secretary Benson above.

[9] *Agriculture in an Unstable Economy* (New York, 1945).

[10] *Ibid.*, p. 89.

[11] Schultz, *Production and Welfare of Agriculture* (New York, 1949), p. 80. This is a theme to which Professor Schultz returns throughout the volume.

[12] *Searchlight*, p. 34.

[13] *Ibid.*, p. 64. See also D. Gale Johnson, "High Level Support Prices and Corn Belt Agriculture," *Jour. Farm Econ.*, Aug. 1949, XXXI, 509-19.

trade. Furthermore, the effect of support operations may be to attract imports which means in turn that foreign producers are sharing in the subsidies by the United States government to its domestic producers. Tariffs and quotas will almost inevitably be urged and quite likely be invoked to prevent what would otherwise be an international distribution of domestic largesse. The prima facie inconsistency of such export subsidies, tariffs and quantitative restrictions with the professed goals of American foreign economic policy has been developed at length by Professor Johnson,[14] and has commanded the attention of other scholars.[15] Recent administrations, it is held, have promoted a liberal trade policy with one hand and in the farm policy have laid the foundation for economic nationalism with the other.

A third criticism of the policy is that the support prices contribute to a reduction of consumer welfare by restriction on the aggregate of resource use. For example, the economists hitherto cited assert that "A high-price program involving restriction of production hurts consumers, particularly in the lower-income groups, because they cannot satisfy their wants as adequately as they could if productive resources were used more fully."[16] Similar allegations have been frequent. Thus, in addition to distorting the pattern of resource use, it is also charged that the policy results in an absolute withdrawal of resources from use.

While damaging the public at large, the gains to farmers from this policy are held to be transitory or illusory. Thus, while finding monopolization of resource use damaging to consumers, the above-cited economists also warn farmers that ". . . monopolistic restrictions on farm production are much less effective than [they] have been led to suppose . . ." and that "This conclusion is based both on logic and the last three decades of agricultural experience."[17]

The policy is also condemned as a cause of inflation and as a brake on recovery when deflationary forces are dormant. The above-cited economists conclude that it is dangerous on both of these grounds.[18] Support prices "are among the factors which tend to put agriculture 'on the bandwagon' of a general inflationary movement" and "free-market clearing prices are likely to do a better job of pulling the economy out of business depression." Professor Brandt has been even

[14] D. Gale Johnson, *Trade and Agriculture, A Study of Inconsistent Policies* (New York, 1950).

[15] For example, Lawrence Witt, "Our Agricultural and Trade Policies," *Jour. Farm Econ.*, May, 1950, XXXII, 159-79. Schultz, *Production and Welfare of Agriculture*, p. 216 ff.

[16] *Searchlight*, p. 65.

[17] *Searchlight*, p. 56.

[18] On the inflationary effects of the policy two of the economists, T. W. Schultz and T. K. Cowden, entered a dissent. *Searchlight*, pp. 50 and 70.

more vigorous in his condemnation of the inflationary tendencies of the policy,[19] while with considerable, although perhaps declining frequency, other scholars have held that, in seeking to stabilize farm prices, we may succeed only in unstabilizing the economy at large.

Finally, and beyond the range of economic values, the present policy is held to have the effect of destroying the freedom of choice, political independence, and moral character of the farmer. Thus the above-cited economists, in a passage italicized for emphasis, agree "that the evolution of national farm policies has now brought agriculture into a position of undue reliance on public financial assistance, on efforts to restrict market supplies, and into undesirable political involvement." Brandt has stated that "Our agricultural policy is now involved in the broad economic issue of western political democracy," and that "When millions of able [farm] entrepreneurs have regained the self-confidence to operate without the social harness of bureaucratic guidance and universal risk insurance, it is an event that may amount to a decisive victory in the free anti-collective world."[20] It would seem to follow that political democracy both in the United States and abroad has been placed in jeopardy by the present farm policy.

If the economists who speak with the greatest authority on this matter are to be taken at their word—and it would be improper to do otherwise or to suppose that they are engaged in the poor scientific method of seeking emphasis through exaggeration—then our present farm policy profoundly threatens our national well-being. Inefficiency, economic isolation, monopolistic exploitation, inflation, depression, and the economic serfdom and political debasement of farmers are all abetted by the policy. The prospect, if all these tendencies are advanced, is disenchanting. Yet the policy which portends these afflictions is one on which Congress is launched and with increasing determination. If the economists are right, then we must brace ourselves for an unpleasant time for there is nothing in the present trend of affairs to suggest that their counsel will be heeded in time. The prospect is alarming unless, the seeming unanimity notwithstanding, there is a chance that the economists are wrong.

II. *The Setting of the Criticism*

It is the function and discipline of social scientists to concern themselves with consequences that lie beyond the eye of the politician. In the early 'thirties, with similar unanimity, the economists concerned with trade policy attacked the political advocacy of higher tariffs. In the

[19] "Agricultural Policy During Rearmament," *Jour. Farm. Econ.*, May 1952, XXXIV, 192 ff.

[20] *Op. cit.*, pp. 194-98.

later view, few would have argued that the politicians who, nonetheless, proceeded to enact the Hawley-Smoot tariff were following the course of wisdom. This may be the present case.

Yet, when any group of scholars finds itself strongly at odds with the current of practical policy it would seem important that it be sure of its case. This is especially true in the present instance for the farm policy under attack has now been in effect, in war and peace, for some thirteen years. Disaster or, at a minimum, grievous disorder has been predicted for much of this period. Yet during this time agriculture has shown, by common consent, a vigorous technological and managerial improvement and, on purely prima facie grounds, would seem to have conformed to high welfare criteria. As Brandt, in a statement that should be contrasted with his depressing view quoted above, has said:

> During the last few decades, a breath-taking technological evolution has been opening new frontiers in agriculture, and the progress has been most spectacular in the United States and Canada. Not only did it assist greatly in winning World War II, but it also kept millions of people in Europe and Asia alive after the war, while providing us at home with a better diet and lifting a large proportion of our farmers to a new level of income.[21]

Moreover, there is a question whether the economists who have been speaking on farm policy have been bringing to bear all of the data which are relevant to a policy judgment. Without exception, the economists herein cited are offering recommendations for practical action. Such recommendations must be shaped not alone by economic and moral criteria, both of which have been liberally invoked, but also by the attitudes and desires of those who are affected. To assume that the economist should recommend only what farmers want or believe they want would reduce him to the role of a poll-taker. But to fail to take account of the farmer as a political entity, while making essentially political recommendations, can be an equal and opposite error. The theorist who, having reached the conclusion that such would be a socially meritorious course, urges union members to disband their organizations and to support the government in legislation to this end is not likely to have either a large influence on labor legislation or even a large reputation for political perspicacity and realism. Should he proclaim his desire to end all unions, willy nilly, he would appropriately be considered somewhat authoritarian in his attitudes. It seems possible that kindred recommendations are not only being made but are a commonplace in regard to farm policy.

If this is so, one antidote is a fuller appreciation of the history of the farm movement in the United States. By a fortunate accident of

[21] *Op. cit.*, pp. 185, 186.

timing, the product of the mammoth labors of Professor Murray R. Benedict of the University of California has recently become available. This is the first comprehensive history of agricultural legislation in the United States and of the organization and agitation which gave rise to it.[22] Benedict shows in a wealth of detail how long the present policy has been in the making. It is a story of much diversity in method and much inconstancy of both leaders and followers. Yet it also mirrors a remarkable and continuing determination by farmers to gain some control over market forces. The reader is left in little doubt that for a half century or more the free market has had little more appeal to the farmer than the unorganized labor market to the worker—or, for that matter, than an industrial market of atomistic purity would have for the modern corporation executive. Yet the free market is what is being urged on the farmer. Anyone is privileged to advocate revolution. He is perhaps better for knowing when he is a revolutionary.

III. *Resource Allocation*

Farm policy may still be a commitment to manifold disorders and disasters, and no less so because the commitment is deep. And even though the disasters have been predicted with increasing urgency for a decade or more without appearing, they may still be ahead. But it is possible that the analysis on which the prediction is based is incomplete or in error. This possibility also needs consideration in any re-examination of the grounds on which the economists' condemnation is based.

There is evidence that the analysis is at least partly in error. As noted, the most persuasive indictment of the farm policy to the economist is the effect of the policy on resource use efficiency. If prices must be a vehicle for sustaining income to farmers, they cannot be an efficient instrument for guiding resource use. For if prices are fixed they no longer command the movement of resources within agriculture or between agriculture and industry in accordance with the dictates of consumer choice.[23]

Obvious though this may seem, further examination shows that some of the concern is ill-founded and more of it is subject to serious, if unconscious, exaggeration. As a broad tendency—to which I concede numerous exceptions—the support prices will be effective during times of low aggregate demand or depression. It is then that prices generally will be resting on the supports. At times of high demand—when the latter is sufficient to sustain high or "full" employment—some or most

[22] *Farm Policies of the United States, 1790-1950, A Study of Their Origins and Development* (New York, 1953).

[23] *Production and Welfare of Agriculture*, pp. 20 ff.

of the prices of supported commodities are likely to be above the support levels.[24]

When prices are above support levels there is no direct impairment of allocative efficiency as the result of the existence of these non-effective supports.[25] But when prices are at support levels as the result of a general deficiency in demand their effect on allocative efficiency is, to say the least, ambiguous. In this context—that of some degree of depression—some resources are idle. The use of resources in the "wrong" place may then be the alternative to no use at all. In any case, their use in one place need not deny resources to another employment since, by definition, there are idle resources on which those other uses may draw. This would appear to have been overlooked by Schultz, for example, who has stated:

> . . . during a depression, when consumer's purchasing power shrinks and prices drop . . . measures that keep farm prices from falling below the support price will disrupt both internal and external trade, unless it should happen that measures employed by the government create enough additional demand to equilibrate the supply at a price at least as high as the support price.
>
> . . . there are two primary objectives that appear to be appropriate in pricing farm products: (1) to improve the allocation of resources in agricultural production, and (2) to maintain farm income. . . .[26]

The "disruption" of which he here speaks is plainly a disruption in resource allocation.

If support prices do not impair allocative efficiency within agriculture in periods of full employment and they do not worsen it in periods of unemployment, then apparently they do not impair it at all. And we have the impressive testimony of Schultz himself to show that relative prices and rewards to factors are a secondary consideration in the movement of resources between agriculture and other enterprise and specifically that labor tends to move from agriculture to industry in times of high relative income rather than low.[27]

[24] This has been the general postwar experience although during part of 1952 and most of 1953, mainly as the result of the rapid shrinkage of foreign demand, this has not been true. I discuss this case presently.

[25] There is a possible indirect effect through the reduction of uncertainty in price expectations. This, however, may have long-run investment consequences which would be generally approved. See below, p. 50.

[26] *Production and Welfare of Agriculture*, p. 96. *Cf.* also my comments, this *Review*, June, 1950, XL, 460-63. These views were expressed nearly four years ago, and it is my impression, based on conversation and correspondence, that Schultz, while still insisting on the absolute importance of free price movements for allocative efficiency (*Cf. Searchlight*, p. 50, footnote) might now be less insistent on the point in a depression context.

[27] *Op. cit.* Also Walter W. Wilcox, "High Farm Income and Efficient Resource Use," *Jour. Farm Econ.*, Aug. 1949, XXXI, 555-57.

However, I do not wish to overprove my case. Because the prices established by the parity formula are arbitrary and bear no necessary relation to equilibrium levels for individual products at full employment demand and because shifts in demand and supply schedules (of which the recent decline in exports and the recent growth in oleomargarine use provide notable examples) can sharply reduce consumption of particular products, price supports may be effective for some products even when aggregate demand is sufficient to sustain full employment. The conditions necessary for a distortion of resource use are then present.

However, here also an amendment to the conventional criticism is in order. In regard to allocative efficiency it seems plain that much comment is decidedly nonquantitative. If inefficiency can be demonstrated, it is *pro tanto* intolerable. There are no degrees of damage; a death sentence on the policy that produces it follows automatically. There is no need to inquire whether the loss of efficiency is serious—whether it warrants the desperate alarm that it induces.[28] Moreover, an examination might, in fact, reveal a rather small cost. Under the relevant conditions—peacetime demand at full employment levels but with some support prices effective—the usual situation, at least in superficial view, tends to be one of fairly general abundance. The obvious manifestation of short-run inefficiency in resource allocation would be shortages and high prices for some products, while the supported products were impounding labor and other resources. This has not been obviously the case to date. At most, price supports have checked the movement of resources from production where the marginal utility of product, *e.g.*, for storage, is very low to others where marginal utility is also low or at least not spectacularly high. Thus a prominent alternative use for resources now held by supports in dairying would be in beef cattle production where there are no supports but where not all concerned would insist on the urgency of increased production.

It is possible, although by no means certain, that the supports have inhibited secular shifts, as from cotton to dairying in the South. Proof would require, however, a showing of the effect of the policy on long-run price relatives which is presently lacking. There seems to be little doubt that the tobacco programs have changed the ratio of land to fertilizer inputs. Even here, however, a case could be made that the distortion has been caused not by the support price but by the form of the resulting control.

[28] This question has recently been asked by Willard W. Cochrane. *Cf.* "A Theoretical Scaffolding for Considering Governmental Price Policies in Agriculture," *Jour. Farm Econ.*, Feb. 1953, XXXV, No. 1, p. 4.

IV. *Farm and Trade Policy*

At first glance the inconsistency of the present support policy with a liberal trade program seems inescapable. Moreover, the desirability of such a trade policy—unlike the absolute importance of unimpaired allocative efficiency—is something which I am not disposed to question. Further, while the welfare consequences of an inefficiency in resource use are hardly matters of observation, the tariff adjustments and quotas that are required by the policy and their incongruity with our proclaimed trade policy are wholly visible.

Yet here again some qualifications, not commonly emphasized in attacks on the policy, are important. The products presently receiving the 90 per cent mandatory supports are either export crops or crops where there are normally no important imports. The general effect of the support prices is to create a market in the United States which would not otherwise exist. The quantitative restrictions and tariffs, to mention the most ostensibly illiberal consequences of the policy, thus protect a market which would not be attractive except for the support prices. Some qualifications are necessary with respect of certain qualities and staple lengths of cotton. There are more important qualifications with respect of wheat and competitive feed grain imports from Canada. (The impact of these restrictions is overwhelmingly on Canada.) But the general rule holds. The policy restricts imports that have first been made artificially attractive.

This is not a complete extenuation nor is it intended to be. As noted, the posture and integrity of American trade policy is inevitably weakened by any restrictions on imports and also by the counterpart subsidies on exports. On the other hand, there is surely a difference between a restrictive measure which offsets an increase in imports induced by another policy and one—like the classical tariff—which has the single aim and effect of inhibiting imports. To the extent that the farm policy is attacked as an original onslaught on a liberal trade policy rather than an unfortunate compensation the critics are not on strong ground.

V. *Restrictive and Cyclical Effects*

A measure of ambiguity or internal inconsistency has already been noted in the other common criticisms of the policy. In objecting to price supports both as a restraint on resource use and hence damaging to the consumer and also as a self-liquidating form of monopoly, the economists above cited have apparently contradicted their own arguments. It would be, however, that they have also drawn attention to a possible difference between the short- and long-run effects of the farm policy. During the years that the present policy has been in effect there

has been a substantial expansion in farm output accompanied by a seemingly favorable rate of technological change. Stability in price expectations would normally be thought favorable to this expansion and change and to the requisite investment. Thus reduction in price fluctuations as the result of some monopolization in particular years *could* be the basis for a larger production and lower prices in the long run. Such considerations have played little part in the technical and scientific criticisms of the policy.[29] The exclusion of price expectations as a factor in production responses (except only to show that they defeat monopolistic aims of farmers) would seem to be poor scientific method.

The attack on the policy as inflationary in inflation and deflationary in deflation also involves problems of internal reconciliation. Further, during the periods of acute postwar inflation the supports were effective only in rare instances for particular commodities.[30] Meanwhile there were counterinflationary effects from the liquidation of previously accumulated inventories. As one example, wartime and postwar cotton textile prices would have been far higher, both in the United States and abroad, had it not been for the large inventory carried over from the depression years of the 'thirties. It seems impossible that those who charge inflation against this policy have measured their argument against this history.

The argument that the supports accentuate or perpetuate deflationary tendencies is also weak. In the economists' report hitherto mentioned the case depends partly on the assertion that the restriction incident to the policy in time of declining demand introduces an "unstabilizing factor."[31] It also rests partly on the claim that "free-market clearing prices" are more likely to arrest or reverse deflation than supported prices and associated production controls.[32] Both of these propositions are coupled with the statement that for "many" farm commodities the price elasticity of demand is greater than unity so that to obtain a given increase in income a more than proportionate cutback in output is required.[33]

[29] Cochrane (*op. cit.*, p. 5) has suggested that in specific instances (tobacco, with regard to which he cites the investigations of Glenn Johnson in Kentucky, and similar work on potatoes in Minnesota) the price support programs have accelerated technological innovation and investment. Schultz has repeatedly emphasized the importance of reducing the amplitude of year-to-year price fluctuations in agriculture.

[30] In 1946 and 1947, the years of most rapid increase in prices, the parity index averaged 113 and 115, respectively.

[31] *Searchlight*, p. 69.

[32] *Ibid.*, p. 70.

[33] *Ibid.*, p. 70. Schultz, in a related comment, appears to disagree with his colleagues' views on the price elasticities as, indeed, he has elsewhere.

These contentions do not stand scrutiny. The statement on price elasticity is flatly in conflict with the evidence.[34] Indeed it is difficult to believe that the available information on the elasticity of demand for farm products could have been reviewed by the economists with markedly more care than a political advocate would normally bring to bear. But even more important, in the practical operation of the support policy in a period of declining demand, the control of production lags well behind—sometimes does not even follow—the pegging of prices. Income, accordingly, is maintained at the volume given by the support price times the full output. If no companion provision is made for taxes, the effect of government expenditures to maintain such income is surely counterdeflationary. In the approximate year and a quarter (to October 31, 1953) that farm prices have been at or near support levels, the Commodity Credit Corporation has committed 2.5 billion dollars to maintain income. There is at least a presumption that these expenditures have had an important effect in limiting the deflationary effects of the heavy decline in farm exports. Here again, the professional objection to the policy is on highly debatable grounds.

I shall pass quickly over the noneconomic objections to the policy. Whether the farmer has, in fact, been debauched or fettered is a matter of opinion, although it involves opinions that social scientists, when speaking professionally, should doubtless render with caution. On the most frequently cited charge—that policy threatens the farmer with a "substantial restriction [of their] freedom of choice," to quote the dry language of the economists above cited, or that they have placed him in "the social harness of bureaucratic guidance" in Brandt's more colorful figure—one observation must be made. This is a loss of freedom which is, by all appearances, much more disturbing to philosopher friends of the farmer than to the farmer himself. And it would be odd were men of some repute both for their intellectual alertness and their political determination, to have lost their freedom without more awareness and without protest.

VI. *Conclusion*

The foregoing is not intended to be a general exculpation of the present farm policy. On the contrary, the policy seems to me to have serious faults. The present price (parity) standards in my view are

[34] Karl A. Fox, "Factors Affecting Farm Income, Farm Prices, and Food Consumption," Bureau of Agricultural Economics, *Agricultural Economics Research*, July 1951, III, 65-82, George L. Mehren, "Comparative Costs of Agricultural Price Supports in 1949," this *Review*, Proceedings, May 1951, XLI, 717-46. These and other data on price elasticities are summarized by Schultz in *The Economic Organization of Agriculture* (New York, 1953), pp. 186 ff.

arbitrary. The discrimination in policy between the so-called basic commodities which are subject to mandatory support and the remainder of agricultural production—which is subject to the same market conditions and is of greater aggregate value—is impossible to defend. The present policy incorporates a design for acquiring large government stocks but none for their management and disposal. It benefits least the income of those farmers who receive least.

A strong case can also be made, if a given farm income is to be guaranteed, that the technique of supporting prices by loan and purchase operations is inferior, for many commodities, to measures which would allow prices to find their own level in the market and provide direct payments to sustain income at the guaranteed levels. Such a technique would go far to reconcile the agricultural with the national trade policy, and it would also elide many of the inventory and disposal problems inherent in the present policy by the admirable device of not acquiring the stocks in the first place. It is interesting that such a policy, in broad contour, has recently replaced fixed price guarantees in the United Kingdom.

Such proposals are not, however, the concern of this paper. Its purpose was to examine the present remarkable divergence between scientific prescription and practical farm policy. That some aspects of the latter are ill-conceived is hardly surprising. This is an area where imperfection is in the nature of things. But the standards of the scientist are less tolerant. He should, to cite the rules the afore-mentioned economists have laid down for themselves, "have technical competence to discover and explain the consequences of given economic actions" and he "should not be [among the] special pleaders for any group or any cause."[35] Examination of the present criticism of farm policy leads me to question whether it is technically above reproach and also whether its weakness may not derive in part from predilections for a cause, which is not the less a cause because its goal is a seemingly traditional arrangement of economic life. If these are the reasons that economists in this field have lost touch with the present current of farm policy and are failing to influence its course there could be none more disturbing.

[35] *Searchlight*, p. 61.

SOME QUESTIONS ABOUT GROWTH ECONOMICS

By LELAND B. YEAGER*

This article makes some observations and asks some questions about the currently popular formalized versions of growth economics that stem from the work of R. F. Harrod and Evsey Domar. The article relates these ostensibly nonmonetary analyses to an explicitly monetary interpretation of prosperity and depression. First, though, a summary of the theories to be discussed is in order.

I. *The Harrod-Domar Approach*

According to Harrod, the volume of saving in an economic system depends on the level of income, and the volume of investment depends on the rate of growth of income. If a slump is not to occur, intended saving at each existing level of income must be matched by intended investment; and if businessmen are to have the incentives to invest this much, income must be growing. Now, the increased income yields more intended saving, which must be matched by more intended investment, which in turn presupposes more income growth. Thus intended saving and intended investment can stay equal at prosperity levels of income only if income grows steadily.[1]

In Domar's version also, intended saving depends on the level of income. If intended investment is forthcoming to absorb this intended saving, it raises the productive capacity of the economic system. If this increased potential income is actually realized, saving and therefore the investment to absorb it must also rise. But more saving-and-investment provides more productive capacity, and so on. Again, continued equilibrium requires steady growth.[2]

The ideas that Harrod and Domar hold in common may be com-

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[1] Harrod states his key ideas most clearly and briefly in "Scope and Method of Economics," *Econ. Jour.*, Sept. 1938, XLVIII, 405. He elaborates them in "An Essay in Dynamic Theory," *Econ. Jour.* Mar. 1939, XLIX, 14-33, and *Towards a Dynamic Economics* (London, 1948).

[2] Evsey D. Domar, "Capital Expansion, Rate of Growth, and Employment," *Econometrica*, Apr., 1946, XIV, 137-47; "Expansion and Employment," *Am. Econ. Rev.*, Mar. 1947, XXXVII, 34-55; "The Problem of Capital Accumulation," *ibid.*, Dec. 1948, XXXVIII, 777-94.

pressed into symbols. Let Y stand for "real" income, s stand for the marginal (and average) propensity to save, and v stand for the marginal (and perhaps average) capital-output ratio. (The proportionalities indicated by s and v are great simplifications but are made by Harrod and Domar themselves.) Then

$$\text{intended saving} = sY \tag{1}$$

and

$$\text{intended investment} = v\Delta Y. \tag{2}$$

(The second equation expresses Harrod's idea that intended investment depends, as explained by the acceleration principle, on the rate of change of income. Alternatively, it expresses Domar's idea that the increase in income necessary to make full use of an increase in productive capacity is proportional to the intended investment that makes this extra income possible.)

If intended investment and intended saving are always to stay equal at full-employment or full-capacity income, then

$$v\Delta Y = sY \tag{3}$$

and

$$\frac{\Delta Y}{Y} = \frac{s}{v}. \tag{4}$$

This result means that if full employment and full use of productive capacity are to be maintained, real income must grow at the definite rate of $100 \times \frac{s}{v}$ per cent per year (or whatever time period is being considered). If real income grew faster than at this ideal rate (that is, if $\frac{\Delta Y}{Y} > \frac{s}{v}$), then intended investment ($v\Delta Y$) would exceed intended saving (sY) at a full-employment income level, and the economic system would suffer from overemployment and general shortages. Conversely, if income were growing more slowly than at the ideal rate, an excess of intended saving over intended investment would prevent full employment from continuing, and the system would suffer from underemployment and a general deficiency of effective demand.

If account is taken not only of induced investment (depending on the rate of income growth) but also of autonomous investment (related otherwise or in no wise to income), then the ideal growth rate becomes not simply the rate associated with the investment necessary to absorb all saving but rather the rate associated with the induced investment necessary to absorb the excess of saving over autonomous investment. With this modification, the earlier conclusion stands: growth of income

faster or slower than at a definite ideal rate results in overemployment and shortages or in underemployment and gluts.[3]

Harrod in particular argues that growth of real income at the ideal rate (the "warranted" rate, as he calls it) is highly unstable: deviations tend to be self-aggravating.[4] His rather special terminology can perhaps be interpreted as meaning that too-fast growth produces an excess of intended investment over intended saving, which tends to stimulate still further growth; while too-slow growth produces an excess of intended saving over intended investment, which further retards or even reverses growth.

II. *Impressive Conclusions*

Simple assumptions about a couple of relationships have thus led to an interesting conclusion: a moving full-employment equilibrium can endure only if income grows at a definite rate fixed by the propensity to save and the accelerator or capital-output ratio; and even when growth is not at this rate the equilibrium is unstable. Now, no one can properly quarrel with the use of simplifying assumptions; economic theorists could get nowhere unless they tried to pick out a comparatively few strategic relationships from all the irrelevant details about the real world. One may quarrel, however, when a writer advertises the logical implications of his own freely chosen simplifying assumptions as inexorable conclusions directly applicable to the real world.

This is what some of the growth theorists seem to have done. Harrod, for example, asks us to join him in finding the results of his algebra "extraordinarily impressive." They strike him "as an extraordinarily simple and notable demonstration of the instability of an advancing system." He exclaims, "Of interest this for trade-cycle analysis!" He thinks his equations show that the trade cycle is likely to continue.[5]

Harrod makes his theory even more "impressive" by introducing the concept of a "natural rate of growth" of real income—"the maximum rate of growth allowed by the increase of population, accumulation of capital, technological improvement and the work/leisure preference schedule, supposing that there is always full employment in some sense."[6] If this "natural" rate of growth falls short of the ideal rate necessary to maintain full employment, troubles ensue. For since the natural rate sets a ceiling to the long-run average of the actual growth

[3] *Cf.* R. G. Hawtrey, "Mr. Harrod's Essay in Dynamic Theory," *Econ. Jour.*, Sept. 1939, XLIX, 469.

[4] *Econ. Jour.*, Mar. 1939, pp. 22-24; *Dynamic Economics*, pp. 85-87.

[5] *Dynamic Economics*. pp. 85, 86; *Econ. Jour.*, Mar. 1939, p. 22; *Dynamic Economics*, pp. 115-117, respectively.

[6] *Econ. Jour.*, Mar. 1939, p. 30. *Cf. Dynamic Economics*, p. 87.

rate (real income cannot actually grow any faster than is physically possible), the actual rate falls short of the ideal rate; and, especially since deviations of the actual from the ideal rate are self-aggravating, a chronic tendency toward depression prevails. Writing before World War II, Harrod felt that an excess of the ideal over the natural growth rate did in fact explain the unhappy condition of the economic system.[7] And he describes the idea underlying his postwar book as "that sooner or later we shall be faced once more with the problem of economic stagnation. . . ." He believes that "the United States is not likely to be exempt from the problem of chronic depression" and that his "analysis is of urgent and vital relevance to the immediate problems of the United States."[8]

J. R. Hicks, whose *Contribution to the Theory of the Trade Cycle* makes great use of and enthusiastically acknowledges Harrod's ideas, also claims, at least implicitly, to have found out something important about the real world. His analysis suggests that certain elements in the world—"the technical necessities of a capital-using economy," for instance—tend, quite apart from such merely reinforcing influences as the behavior of money, to generate business cycles. He deliberately emphasizes "the *real* (non-monetary) character of the cyclical process" and seeks "to show that the main features of the cycle can be adequately explained in real terms."[9]

III. *Illegitimate Precision*

Harrod's key idea—that upward or downward deviations from a certain ideal or "warranted" rate of growth of real income produce cumulative booms or depressions—certainly purports to describe the real world. My first question is: Has any empirical content been given to the analysis that yields this supposed fact? My complaint is not that no statistical tables and correlations buttress the analysis; it would be quite satisfactory to learn how everything follows from the "inside" knowledge of human decision-making that economists have because they too are human beings, from the law of diminishing marginal rate of substitution, from the law of diminishing returns, or from similar empirical generalizations. Harrod's analysis appears to lack even this sort of empirical basis. Everything flows from mere definitions and assumptions—the concepts of "warranted" and "natural" rates of growth and the assumed proportionalities between saving and income and between investment and change in income. Now, if the conclusions spun out from such assumptions and definitions strike us as strange and

[7] *Econ. Jour.*, Mar. 1939, p. 33.

[8] *Dynamic Economics*, pp. v-vi.

[9] *Op. cit.* (Oxford, 1950), especially pp. 117, 136.

"extraordinarily impressive," we need not necessarily conclude in astonishment that we have learned something new. Instead, we may re-examine our assumptions—especially if (as I hope to show) we have reason to doubt that nonmonetary factors make an advancing economic system inherently unstable.

The Harrod-Domar analysis almost has the reader visualizing the economic system as a nervous tightrope walker. The system gets into trouble unless it sticks to a precisely determined narrow path. However, Harrod and Domar are able to specify an equilibrium path with precision only because they assume precise income-saving and income-investment relationships. It may be legitimate to assume precise relationships merely to avoid irrelevant complications in an analysis from which one derives only qualitative conclusions. But it strikes me as wholly illegitimate to suppose that the economic system gets into trouble if it does not satisfy the *precise* conditions implied by one's own overly precise assumptions.

To be specific, the propensity to save and the marginal capital-output ratio (symbolized above as s and v) are not constants. Saving depends on many other things besides the level of income. Investment depends on many other things besides the rate of growth of income, and the increase in productive capacity of an economic system depends on many other things besides investment. The assumed proportionalities are thus hardly reliable enough to support a chain of reasoning. Furthermore, even if all the relevant influences could be taken into account in elaborate mathematical functions, there would be no reason to suppose such functions stable through time. Harrod and Domar themselves do recognize a good deal of all this, sometimes emphatically, but mostly by way of obiter dicta: their formal systems treat the propensity to save and the marginal capital-output ratio as if they were given parameters. And it is hard to see how they could have spun out any definite conclusions at all about ideal growth rates unless they *had* tacitly assumed given parameters.

Of course, if s and v changed only "autonomously" through time—meaning only otherwise than in response to the requirements of full-employment equilibrium—the growth analysis would not necessarily be discredited. At any time there would exist an ideal rate of growth, deviations from which would cause trouble; though this ideal rate would vary from time to time. However, the ominous conclusions of the Harrod-Domar analysis are not established unless it is shown that s and v do not tend to make equilibrating adjustments. If adjustment possibilities are good, the whole concept of a definite ideal rate of growth, and especially the stagnationist concept of an ideal rate in excess of the "natural" rate, is left with no referent in the real world.

Harrod and Hicks use the marginal capital-output ratio (symbolized above as v) as a kind of accelerator. The acceleration principle explains how changes in the demand for final products can have a magnified effect on the demand for capital goods used in supplying them. Hicks explicitly assumes v to be constant and regards the acceleration principle as a real (nonmonetary) element in the business cycle.[10] Admittedly, the acceleration principle may be plausible as a "nonmonetary" explanation of investment in single industries. However, any explanation of how aggregate investment throughout the economic system responds in a magnified way to changes in aggregate output (real income) must suppose changes in the total flow of spending—in Fisher's *MV*. Barring a rise in *MV*, an increase in some kinds of investment can only be at the expense of other kinds of investment or of consumer-goods production or of both.[11] As Gottfried Haberler says, the acceleration principle cannot serve even as an incomplete and partial explanation of the business cycle except in conjunction with an elastic credit supply.[12] Despite Hicks' explicit and Harrod's implied assertion, the accelerator is ***not*** a nonmonetary element in the business cycle.

Nonmonetary theorists may perhaps justify their soft-pedaling of *MV* on the grounds that it adapts itself quite passively to the really crucial elements they emphasize instead. Even so, that very passivity of *MV* would presuppose some important characteristics about the monetary system that should not be slurred over in a theory from which somebody might try to draw policy conclusions.

In short, the very concept of a definite acceleration coefficient depends on hidden assumptions about the monetary system. Actually, the acceleration coefficient—if we dare work with such a concept—may be expected to change with such things as price expectations, interest rates, the tightness or looseness of credit rationing, the condition of the stock market, and so on. Businessmen's willingness to invest is also affected by the size of cash balances relative to income or to the volume of transactions and by the relative prices of various kinds of labor, capital goods, and consumer goods.

The relationship between investment and income changes assumed by Domar is that a unit of net investment raises the productive capacity of the economic system by a definite amount; and if productive capacity is to remain fully used, real income must rise by the same definite amount. Domar's relationship is no less vague and changeable than

[10] *Trade Cycle*, pp. 58, 68n., 136-37, 157.

[11] Unless the general price level adapted itself so that a stable *MV* could do more "real" work when aggregate output expanded and less "real" work when it contracted. But a falling price level in boom times and a rising price level in depressions is, of course, the opposite of what actually happens.

[12] *Prosperity and Depression*, 3d ed. (Geneva, 1941), p. 101.

Harrod's accelerator. Different kinds of investment affect the productive capacity of the economic system in quite different degrees: contrast various kinds of investment in industrial plant and equipment with various kinds of investment in inventories, in housing, and so forth. Contrast investment to reduce the cost of production of existing output with investment to expand output along existing lines and with investment to make new goods and services. Even the distinction between investment and consumption has a vague and conventional character.[13] The lack of any reason to suppose a reliable proportionality among the various types of investment is just one reason for not supposing a reliable proportionality between aggregate investment and the resulting increase in aggregate productive capacity. Furthermore, this ratio can hardly stay constant when large changes in the stock of capital goods are unaccompanied by large changes in the supplies of labor and other factors of production; what about the law of diminishing returns?

The propensity to save is likewise unstable. By listing for himself some of the countless things that influence saving, the reader can get an idea of the many possibilities for equilibrating adjustments.

In view of all this, the growth theorists should explain just *why* s and v are as stable and nonadjusting as they must tacitly suppose. Until they do explain this, their ostensible conclusions, though set forth in a roundabout and impressive fashion and with much special terminology and much translation back and forth between algebra and English, remain mere unsupported assertions.[14]

Skepticism is even more justified about worries that Harrod's "natural" rate of growth of real income might fall short of the ideal or equilibrium rate. The concept of a natural rate (the rate of growth of peak *potential* total output) is hardly more definite than the fuzzy concept of an ideal rate. Intensive capital formation accompanying rapid actual growth would presumably speed up the so-called natural rate, while sluggish capital formation accompanying slow actual growth would presumably hold down the natural rate. Capital formation is almost surely not an independent variable; it must be influenced, among other things, by monetary conditions, interest rates, and relative prices of capital and consumer goods and labor. Even technological progress is not completely a datum. Neither are people's work/leisure preferences. In any case, the burden of justifying such a concept as a unique natural rate falls upon the writer who uses it.

[13] Incidentally, it seems to me that the distinction between autonomous and induced investment has almost no operational meaning.

[14] Skepticism about the very concept of an ideal growth rate explains my neglect of the question whether the growth rate that maintains full employment of labor coincides with the growth rate that maintains full use of capital equipment. For even more reasons than those already implied, this must be considered an illusory issue.

IV. *The Monetary Aspect*

If we could show that no trouble from supposed discrepancies between various growth rates would occur under stable money conditions, we would be showing that the determinants of the ideal, natural, and actual growth rates would tend to adjust to the requirements of full-employment equilibrium. To show this, let us take a new line of reasoning. Let us suppose for the sake of argument that there is such a thing as an ideal or equilibrium rate of growth of real income and that the actual rate of growth happens to be faster. According to the Harrod-Domar analysis, businessmen then find themselves with "insufficient" capital goods. An excess of intended investment over intended saving at the full-employment level of income is pushing the economic system beyond into a condition of general shortages. Investors are trying to spend more money on investment than people are willing to save. MV is tending to rise. Either people are on balance dishoarding (velocity is rising) or the money supply is growing (perhaps in large part through loans to investors). Restriction on growth of the money supply would seem to be the remedy for this inflationary situation. Credit rationing could get tight enough or interest rates could rise high enough to keep investment spending from exceeding the volume of current voluntary saving; there is no ceiling on the interest rate analogous to the Keynesian floor. The marginal capital-output ratio, the ideal rate of growth, and the actual rate of growth simply could not all remain rigid; equilibrating adjustments would be bound to occur.[15] In short, there seems to be no operational distinction between avoiding monetary inflation and avoiding what Harrod and Domar would call an excess of the actual over the ideal growth rate.

Now let us suppose, by contrast, that real income is actually growing more slowly than at the ideal rate. Consequently, capital equipment is lying idle; and a potential excess of intended saving over intended investment at the full-employment level of income is holding actual income down. Now, the very fact of oversaving implies the existence of some form other than goods in which people can accumulate savings: when people on the whole want to buy fewer goods and services than they are trying to sell, they must be trying to acquire larger cash balances than are available in the aggregate. At existing price levels, more money is being demanded than is in existence. What reason, then, is there for supposing that no increase whatever in the money supply could remedy this deflationary situation—that the demand for money

[15] Some of these adjustment possibilities are mentioned in William Fellner, "The Capital-Output Ratio in Dynamic Economics," in *Money, Trade, and Economic Growth—Essays in Honor of John Henry Williams* (New York, 1951), pp. 116-20.

to hold is absolutely insatiable? Since the size of people's cash balances affects their desires to save and to invest, would not relief of the excess demand for money through an increase in the money supply lessen the propensity to save or stimulate investment or both? (Furthermore, would not the very monetary or fiscal action through which the new money came into circulation work as a kind of investment or offset to saving?) In other words, would not proper money management be bound to promote equilibrating adjustments in s, v, the ideal growth rate, and the actual growth rate? Those writers who claim to have found that business cycles are essentially nonmonetary have not justified their implied "no" answers to these questions. Without such justification, there seems to be no operational distinction between avoiding monetary deflation and avoiding what would be interpreted in the Harrod-Domar theory as income growth slower than at the ideal rate.

V. *Definitions and Metaphors*

How can the Harrod-Domar-Hicks type of theory actually draw attention away from such vital aspects of boom and depression as monetary conditions and yet seem to say something worthwhile? Possible answers to this question teach an object lesson. Some highly relevant misrepresentations of reality do not spring to the eye because the theory conceals its assumptions in concepts that are remote from actual human behavior. Consider, for example, some of Harrod's definitions. "The warranted rate of growth is taken to be that rate of growth which, if it occurs, will leave all parties satisfied that they have produced neither more nor less than the right amount. Or, to state the matter otherwise, it will put them into a frame of mind which will cause them to give such orders as will maintain the same rate of growth." Alternatively, it is "that overall rate of advance which, if executed, will leave entrepreneurs in a state of mind in which they are prepared to carry on a similar advance," "the rate of advance which will give satisfaction and lead to its own perpetuation," the "line of advance which, if adhered to, would leave producers content with what they had done," or "the entrepreneurial equilibrium; it is the line of advance, which, if achieved, will satisfy profit takers that they have done the right thing. . . ."[16]

These definitions are so fuzzy that one cannot even be sure they are equivalent. The warranted rate of growth, as so defined, has no operational meaning: it is hard to conceive of any methods of observation through which one could familiarize oneself with the concept. The

[16] *Econ. Jour.*, Mar. 1939, p. 16; *Dynamic Economics*, pp. 82, 86-87. Harrod's "natural" rate of growth and its ambiguities have already been discussed. See also the definitions of "C_r" and "*d*" in *Dynamic Economics*, pp. 82, 96.

concept is question-begging, anyway: Harrod establishes by definition the idea he intends to prove—that there is in each particular state of economic affairs a unique rate of growth of real income, deviations from which will constitute some kind of disequilibrium.[17]

One can juggle concepts and symbols defined in a question-begging or meaningless way for quite a while with no danger of saying anything contradictable by observable facts of technology or of human behavior. Metaphorical language lets the theorist even think he is saying something. Consider this example: "If G_w is substantially above G_n, the G curve may intersect the G_w curve some time before full employment is reached, thus making a vicious spiral of depression inevitable at this point."[18] Harrod leaves conveniently vague just what sort of observable event corresponds to the intersection of two curves. Hicks's *Trade Cycle* is also full of metaphorical language: "the system" follows a certain path, strikes a full-output ceiling, bounces off, and so on.[19]

Theorizing of the kind criticized in this paper commits the error of "conceptual realism." The growth theorists apparently sometimes forget that concepts such as the propensity to consume, the capital-output ratio, the ideal rate of growth, and the natural rate of growth are not actual entities in the real world but rather just freely chosen constructs of their own minds. Of great help in avoiding such errors would be constant efforts to relate one's concepts to observable facts confronting decision-making individuals.

People who work with supposed parameters of the sort discussed in this paper seem unwilling to face an important fact: there are no constants in economics corresponding to such things as atomic weights, refractive indexes, the speed of light, or the acceleration of gravity. The urge to use corresponding parameters in economics perhaps stems from the prestige of natural science. Yet it is hardly "scientific" to succumb to such an urge: while experiment justifies natural scientists in relying on the stability of their parameters, some economists simply postulate the existence of parameters despite lack of evidence and, indeed, despite ample reason for doubting that stable numerical relationships hold true in human affairs.

[17] On page 23 of his 1939 essay, Harrod states that "the propensity to save and the quantity of capital required by technological and other considerations per unit increment of total output" jointly determine a "unique warranted line of growth." On page 30, he says "there is no unique warranted rate," although he apparently believes in a unique "proper" warranted rate.

[18] *Dynamic Economics*, p. 90.

[19] See in particular pp. 29-30, 98-100, 106-7, 11, 123. Apparently the "peculiar use of definitions" that Wassily Leontief discusses in "Implicit Theorizing: A Methodological Criticism of the Neo-Cambridge School," *Quart. Jour. Econ.*, Feb. 1937, LI, 337-51, has become fashionable at Oxford also.

VI. *Final Questions*

Nothing in the growth economics of Harrod and Domar has revealed forces in the real world that tend, quite apart from the behavior and management of money, to produce depressions and inflationary booms. Nothing in growth economics discredits an explicitly monetary view (which need by no means be an *exclusively* monetary view). This sort of growth economics provides no satisfactory answer to these two questions: (1) Is it possible to conceive of and describe consistently and in detail a situation in which the money supply is being kept fully equal to the total amount of money that people demand to hold at the existing price level and yet in which the economic system is suffering the characteristics of too-slow growth in the Harrod-Domar sense? (2) Is it possible to conceive of and describe consistently and in detail a situation in which the money supply is being kept no larger than the total amount of money that people demand to hold at the existing price level and yet in which the economic system is suffering the characteristics of too-fast growth in the Harrod-Domar sense? My judgment is that the answer to both questions is "no"; but if the answer is "yes," the descriptions called for in the questions should be highly instructive.[20]

[20] Monopolistic upward pressure on prices or, particularly, on wages could account for mass unemployment in the absence of monetary deflation. However, it would be a misleading tour de force to interpret such a condition in terms of divergence between actual and ideal growth rates.

AN INVESTIGATION INTO THE DYNAMICS OF INVESTMENT

By R. W. CLOWER*

Partial equilibrium analysis includes some of the most fundamental and well-established ideas in economic theory. Nevertheless, certain aspects of this field—specifically, those portions which deal with the pricing of durable goods—are rather obscure. If one considers a market for services or a market for perishable goods, it is fairly clear what is meant by the familiar statement that "price tends to be established at a level which equates supply and demand." If price were greater than the "equilibrium" level, buyers would be confronted, in effect, with a "queue" of willing sellers; since some sellers would accept a lower price in order to avoid inconvenience (and loss) associated with "queuing," price would tend to fall. If price were less than the equilibrium level, sellers would be confronted, in effect, with a "queue" of willing buyers; since some buyers would offer a higher price rather than "wait their turn," price would tend to rise.

If one considers a market for durable goods, matters are rather different. In this case it is usual to argue that if price were above the level which equates supply and demand, commodity stocks would accumulate; since some sellers would accept a lower price to avoid holding undesired stocks, price would tend to fall. A similar argument is used to show that if price were set temporarily below the equilibrium level, forces would be set in motion which would tend to make price rise. The difficulty in these cases is that it seems equally plausible to argue that if price lies above the equilibrium level, this may be because some individuals *want* to accumulate stocks. Otherwise the phenomenon of investment would be incomprehensible. But does the mere process of investment in stocks imply a tendency for price to fall? Similarly, if price is below the equilibrium level so that demand exceeds supply, it is reasonable to argue that some individuals *want* to disinvest. Does this necessarily imply a tendency for price to rise?

This paper attempts to give precise answers to the above and related questions. More generally, it deals with the pure theory of investment

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in a competitive market for a single durable good. The argument is developed in three stages. The factors which govern the price of a durable good at any given moment of time are first outlined. This is followed by an examination of the general conditions governing the course of prices and investment over an interval of time.[1] Finally, some illustrative examples are given to indicate the probable qualitative effects upon the level and time path of prices and investment of changes in various given conditions. It might appear that the pricing of durable goods involves no unfamiliar problems; in general this is not so, but neither does it involve entirely unfamiliar problems. The truth seems to lie between these two extremes. The present analysis, at least, results in a definite blending of traditional and novel ideas.

I. *Price Determination at a Given Moment*

Let us begin by setting out the supply and demand relations which govern current price in a market for a particular kind of durable good.[2] The aggregate stock of a durable good existing at any moment of time is a legacy from the past. It can be altered gradually by future economic activity; but if a sufficiently short time period is considered, additions to, or depletions of, the existing stock during a single period will be negligible.

On the other hand, the aggregate market demand for a durable good at any moment will depend upon current economic decisions. A durable good will be held currently for the sake of its expected future yield of saleable services and/or subjective satisfactions, the precise manner in which an individual (or firm) distributes its resources among various assets being determined by the condition that, at the margin, equal value quantities of different assets shall afford equal value yields. Hence, if productive techniques are specified, and if all expected future prices and the current prices of all other goods are given, the prospective yield of a durable good will be a function of its current price. *Ceteris paribus,* an "economic unit" will ordinarily purchase and hold a larger quantity of a durable good for future use, the lower is its current price in relation to the prices of other assets. Hence, the durable good demand curve of a single economic unit will normally slope downwards from left to right, and similarly for the market demand curve obtained by summing unit demands at each possible price.

Every durable good in the economy must be held by someone; *i.e.,*

[1] The first two stages of the argument are summarized in a mathematical note at the end of the article.

[2] Just what specific durable good is selected does not greatly matter for the purposes of this argument; however, the reader may find it helpful at times to think in terms of some concrete commodity, *e.g.,* wheat.

economic units in the aggregate must hold the whole of the existing stock of a durable good. On the other hand, any one unit is at liberty to decide for itself—on the basis of relevant market information—what quantity of a durable good to hold. If these two statements are to be consistent, however, the current price must be such that individuals in the aggregate (via interunit exchanges of existing stocks) are *willing* to hold the whole of the stock outstanding. Thus, through variations in the current price of a durable good, the freedom of each economic unit to do as it pleases is rationalized with the necessity for units in the aggregate to hold a predetermined quantity of each durable good. This explanation of the pricing of a durable good is illustrated graphically in

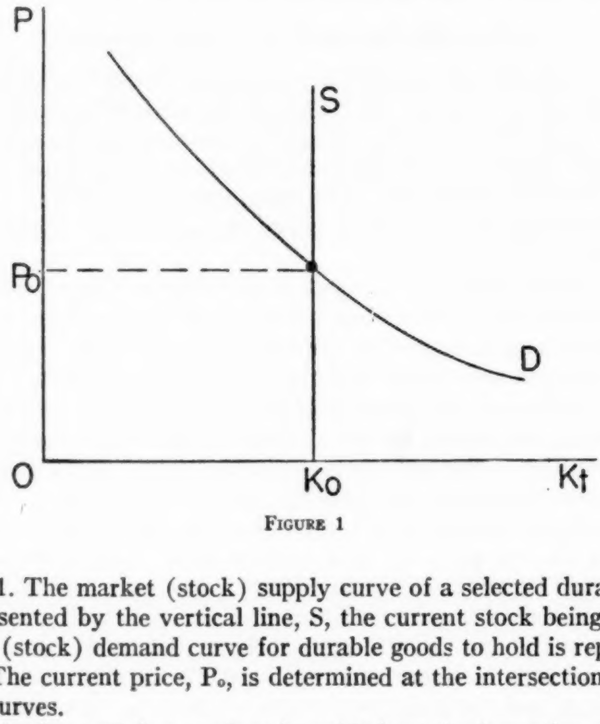


FIGURE 1

Figure 1. The market (stock) supply curve of a selected durable good is represented by the vertical line, S, the current stock being K_0. The market (stock) demand curve for durable goods to hold is represented by D. The current price, P_0, is determined at the intersection of the S and D curves.

That is about all that needs to be said about the formation of current market prices of a durable good. However, it should be observed that because the precise position of the demand curve depends, among other things, upon expected future prices, and because foresight is unlikely ever to propose what hindsight knows, the market for any durable good is necessarily "speculative." Thus, the current market price is a highly temporary phenomenon.

II. *Conditions Governing Prices and Investment over Time*

The current market price of a durable good may be altered, in the first instance, by a change in demand and supply conditions (prices) in other markets. Again, the current price may vary because of a change in price expectations of dealers in the durable good market. The method of treatment adopted in this discussion does not permit anything new to be said on these matters and they are therefore left to one side for the time being. Finally, the current market price may be affected by changes in the existing stock of durable goods. This possibility merits closer consideration.

A certain portion of the stock of a durable good will disappear during the current period as a result of obsolescence, accidental destruction, and exposure to the elements. In dealing with real-world problems, this kind of "capital consumption" has to be taken into account; however, such matters are not amenable to theoretical treatment and will be ignored in this discussion. I assume, therefore, that durable goods disappear from the economy only through physical wear and tear—the actual "using up" of the services of which durable goods are composed. Thus, in the case of a good which is "original and indestructible," the stock is permanently fixed; its price will be determined according to the principles set out in the previous discussion, and no new issues arise. However, most durable goods are neither original nor indestructible; current stocks may be increased by current production and depleted through current use. Accordingly, what we have to do next is to investigate the conditions governing current levels of gross investment and gross disinvestment in stocks of a given durable good.

A. *Market (Flow) Supply and Demand*

The supply of a new durable good forthcoming into the market during a given period of time (gross investment) is described in terms of an ordinary market (flow) supply curve. Like the demand for goods to hold, the supply of newly produced assets will be a function of current and expected prices. *Ceteris paribus,* suppliers of new durable goods will find it profitable to produce a larger output the higher the current price at which output can be sold; hence, the *flow supply curve* will slope upwards from left to right. Output of the durable good per period will be pushed to the point where the supply price of the marginal producer is equal to the current price as set by the demand for and supply of the current stock of previously produced durable goods. This is illustrated in Figure 2. The industry supply curve of *new* durable goods in the current period is represented by S. The demand curve for newly produced durable goods is represented by D′. The latter curve is infinitely elastic at the level of the current market price since, by hypothesis, the

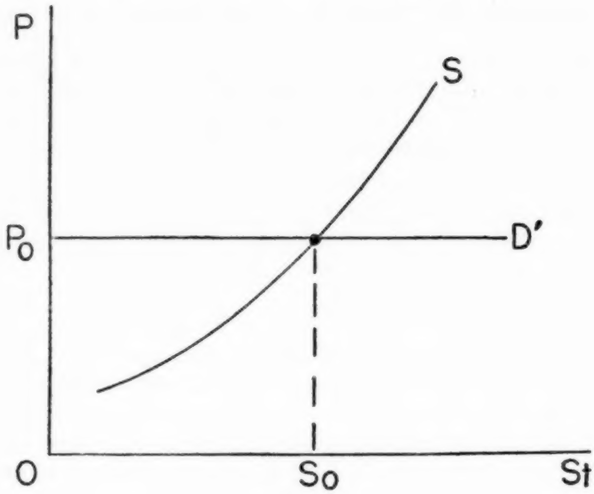


FIGURE 2

market period is so short that current new supply is negligible in relation to existing stocks; *i.e.*, all durable goods which are newly produced during the period can be added to previous holdings without any noticeable reduction in price. Thus, if the current market price is P_0, the supply of new durable goods, S_0, will be determined at the intersection of the S and D′ curves. Notice that the situation depicted in Figure 2—involving sales by an *industry* to a market in which existing stocks are large in relation to current new supplies—is closely analogous to the situation which confronts an individual producer in a market in which supplies forthcoming from all producers are large in relation to the production of any one producer.

The quantity of durable goods demanded for current use at various prices during any given period of time (gross disinvestment) is described in terms of an ordinary market (flow) demand curve. This curve is to be distinguished sharply from the (stock) demand curve for durable goods *to hold;* since durable goods are currently held in anticipation of possible use during a number of periods, the necessity of this distinction is apparent. Like any demand curve, the demand for durable goods for current use will be a function of present and expected future prices. *Ceteris paribus,* firms will find it profitable to consume larger quantities of durable goods in the current period the lower their price, so that the *flow demand curve* will slope downwards from left to right. Gross disinvestment in the current period will be pushed to the point on the demand curve where the demand price of the marginal user of

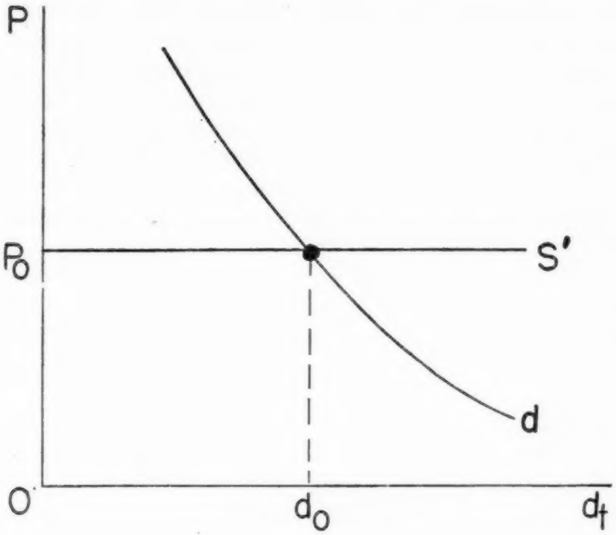


FIGURE 3

durable goods is equal to the current market price. This is illustrated in Figure 3. The market demand curve for "capital consumption" in the current period is represented by d. The supply curve of durable goods for current use is represented by S′. The latter curve is infinitely elastic at the prevailing market price since the market period is so short that current depletion of the existing stock of durable goods can be neglected; *i.e.*, all demands for current disinvestment can be satisfied by drawing on existing stocks without an increase in price. Thus, if the current market price is P_0, the current level of disinvestment, d_0, is determined at the intersection of the d and S′ curves.

B. Temporary and Stationary Equilibrium

In order to obtain a more adequate picture of the pricing process in a durable good market, the data given in Figures 1, 2, and 3 need to be considered as a whole;[3] this is done in Figure 4. Figure 4a is a re-

[3] Up to this point, I have attempted merely to restate and clarify received doctrine. Thus, my *stock* demand curve is substantially identical with the familiar *reservation* demand curve concept, and my *flow* supply and demand curves are essentially the same as the familiar *short-run* supply and demand curve concepts. From this point onward, however, there is a definite breach with tradition. In the existing literature, it is almost invariably assumed that supplies of a good are *either* fixed *or* variable, and in any case the process of price determination is always analyzed in terms of one or the other of these two assumptions (see, *e.g.*, George J. Stigler, *The Theory of Price* (Revised Edition), New York, The Macmillan Company, 1952, Chapters 9 and 10). However, durable goods

production of Figure 1 with certain additions which will be mentioned later. The curve e in Figure 4b represents the *excess flow demand curve* which is implicit in Figures 2 and 3. This curve is derived by subtracting flow supply from flow demand at each possible price and plotting the resulting quantities against price; it shows for each possible price the corresponding level of net investment (or net disinvestment) which will occur during a given period. For the moment it is convenient to assume that the vertical and horizontal scales are the same in Figures

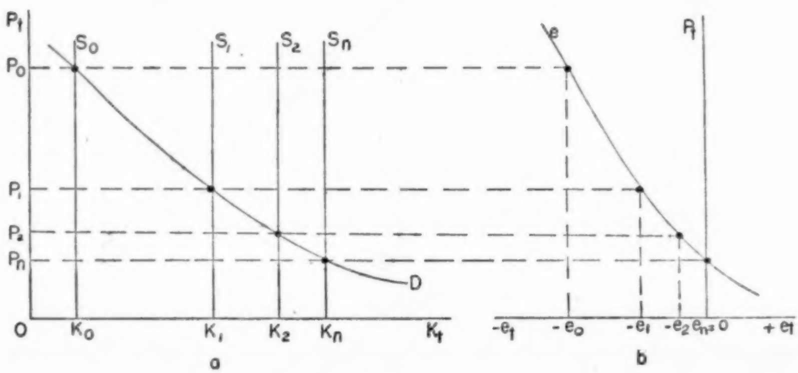


FIGURE 4

4a and 4b (*e.g.*, if 1 inch equals 100 units on the horizontal axis of Figure 4a, 1 inch equals 100 units *per period* on the horizontal axis of Figure 4b).

Suppose that at time t_0 the stock of durable goods is K_0 so that market price is established momentarily at P_0, representing a position of *temporary equilibrium* such that individuals in the aggregate are willing to hold the existing stock of durable goods. At this price, excess flow demand will be negative; hence, net investment will occur during the initial period. At the beginning of Period 1, therefore, the stock of durable goods will have risen to $K_1(K_1 = K_0 + e_0)$, and price will fall to P_1. At the price P_1, net investment (e_1) will still be positive, so that

seem to fit both of these supposed alternatives equally well, for *while a typical durable good is necessarily in fixed supply at any instant of time, existing stocks of the good will normally be changing at the same instant as a result of net investment or disinvestment.* Thus, in dealing with durable goods, it is a highly questionable procedure to treat price determination by stock supply and demand relations and price determination by flow supply and demand relations as mutually exclusive alternatives. The novelty of the subsequent argument is a direct consequence of denying the mutual exclusiveness of these alternatives. Previous writers have kept both stock and flow horses in their stables, but they have ordinarily used them to draw different carts; the horses are run in double harness in this paper.

at the beginning of Period 2 the stock of durable goods will be K_2 ($K_2 = K_1 + e_1$), price will fall to P_2, *etc.* So long as the market is in a position of flow disequilibrium (*i.e.*, so long as $e_t \neq 0$) this process will continue. In the above example, however, a position of stationary equilibrium will be more nearly approached in each succeeding period; that is to say, there will be a direct, if gradual, movement towards a situation in which the stock of durable goods is K_n, price is P_n, and $e_n = 0$. If this position is eventually attained, price will remain stationary thereafter unless the market is disturbed by changes in factors other than those which are taken as variables in the present discussion. An argument similar to the above clearly applies, *mutatis mutandis,* if one takes as a starting point a price which is such as to induce net disinvestment.

C. *Stability of the Market*

At this point it is natural to ask in what circumstances price, if disturbed, will tend to return to the stationary equilibrium level; *i.e.*, what factors govern the stability of the market? Also, if the market is stable, will the approach towards equilibrium be direct (as in the previous illustration) or are oscillations about the stationary equilibrium price level possible? Two possibilities have to be considered:

1. *Trading activity may occur only at discrete moments in time.* In this case it can be shown (see the Mathematical Note, pp. 78-81) that for linear demand curves, the market will be stable if (a) the stock demand and the excess flow demand curves slope in the same direction (whether positive or negative), and (b) the stock demand curve is less than twice as steep as the excess flow demand curve (both slopes being referred to the quantity axis). Since the slope of the excess flow demand curve is proportionate to the length of the market period (*i.e.*, halving the market period will halve all *per period* quantities), while the slope of the stock demand curve is independent of the market period, condition (b) will always be satisfied if trading dates are sufficiently close together (see the Mathematical Note, p. 79). The time required for the market to approach stationary equilibrium will be less the smaller the absolute difference between the slopes of the stock demand and excess flow demand curves (see the Mathematical Note, p. 79).

Even if the market is stable, it may display damped oscillations about the equilibrium price if the market period is sufficiently long, for damped oscillations will occur if the slope of the stock demand curve is greater than the slope of the excess flow demand curve[4] (Mathematical Note, p. 81). Such a case is illustrated in Figure 5. The curves shown in this diagram are defined in exactly the same way as those in

[4] The approach towards equilibrium will be direct if the slope of the stock demand curve is less than that of the excess flow demand curve (Mathematical Note, p. 79).

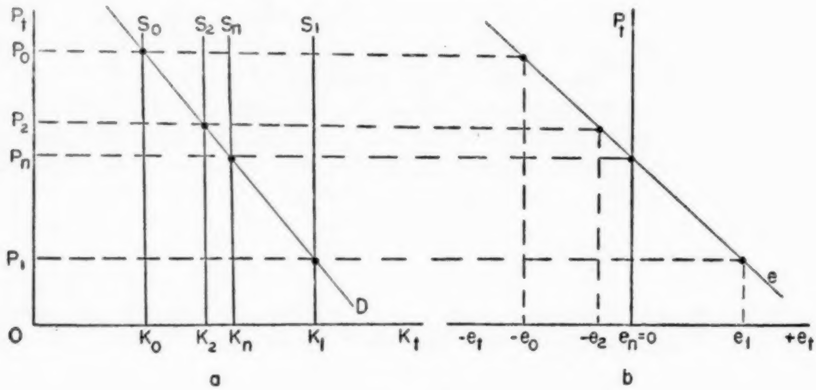


FIGURE 5

Figure 4; but in the present example the excess flow demand curve is less steeply inclined than the stock demand curve. The reader may verify for himself that, starting at the price P_0, both K_t and P_t rise and fall in alternate periods, so that the current price describes a "flat" spiral about the stationary equilibrium price. Basically, this is the same thing as the familiar "cobweb" cycle; but the present is more general than the usual treatment of this phenomenon because no production or trading lags are presupposed and because commodity stocks enter the analysis as an explicit variable.

2. *Trading in the market may take place continuously.* In this case it can be shown that for linear demand curves the market will be stable only if the stock demand and excess flow demand curves are both downward sloping (Mathematical Note, p. 81). Whether the approach towards equilibrium is direct or oscillatory will depend upon the relative slopes of the two demand curves,[5] and upon the rapidity with which price adjusts to changes in excess *stock* demand. The last mentioned complication is characteristic of a single market involving both stock and flow variables; it does not appear in ordinary partial equilibrium analysis, although it may arise in a different form in ordinary general equilibrium analysis.[6] If the "speed of adjustment" of price is sufficiently rapid, the approach towards stationary equilibrium will always be direct (Mathematical Note, p. 81).

To summarize the results of the preceding sections: The market price of a durable good at any moment is governed by current and ex-

[5] Precise conditions for oscillatory behavior are given in the Mathematical Note, p. 81.

[6] *Cf.* P. A. Samuelson, *Foundations of Economic Analysis* (Cambridge, 1948), pp. 263-72.

pected prices taken in conjunction with technical conditions affecting the production of new, and the consumption of previously produced, durable goods. If these conditions are given, the current market price will be established at a level which brings the existing supply of durable goods into equality with the demand for durable goods to hold. If at this "temporary" price the market is in flow disequilibrium (with current production exceeding or falling short of current consumption), the stock of durable goods, and so the "temporary" price, will alter gradually over time. If the market is stable, a position of stationary equilibrium will be approximately attained after the lapse of a sufficient length of time. The nature of the approach towards equilibrium may be direct or oscillatory, depending upon the slopes of the stock demand and excess flow demand curves and (in the case of discrete trading dates) upon the length of the market period or (in the case of continuous trading) upon the "speed of adjustment" of price to changes in excess stock demand.

III. *Adjustment Processes Continuous through Time*

A major shortcoming of modern economic theory is that it does not include a set of analytical tools sufficiently simple and precise, yet sufficiently familiar in terms of traditional ideas, to permit economists to deal effectively with elementary dynamic problems. In the previous discussion an attempt has been made to develop a technique which meets these requirements by generalizing a partial equilibrium model of a durable good market to allow for the simultaneous treatment of stock and flow variables. This generalization adds certain essentially dynamic features to traditional partial equilibrium analysis, thus permitting one to proceed some way towards an explicit characterization, for a single market, of adjustment processes continuous through time. To deal adequately with this topic would require more space than is available here. However, the general method of approach can be made tolerably clear by outlining a few sample analyses of the response of the present model to changes in the demand for final goods, the rate of interest, and technical knowledge. Naturally the discussion that follows is intended to be suggestive rather than rigorous, illustrative rather than comprehensive.

A. *Changes in Demand for Final Goods*

Since any change in the current demand for consumer goods will affect relative prices, it will alter the demand for durable goods to hold. However, a change in demand typically will be spread over a large number of goods, and since durable goods are held primarily for use in the future, the *direct* effects upon a single market of a change in

consumer demand are unlikely to be significant in the short run. Nevertheless, if a change in current demand alters expected future prices (*i.e.*, if price elasticities of expectations are nonzero) the demand for durable goods to hold may shift noticeably, in which case there will be important *indirect* changes in current market variables. Indeed, what we have to deal with here is a very general version of the so-called "acceleration principle of derived demand." A diagrammatic illustration will help to clarify the matter. In Figure 6, suppose that the market is initially in stationary equilibrium. Moreover, assume that as a result of an increase in consumption demand there is a 10 per cent increase (at the current price) in the demand for durable goods to hold. This is represented in Figure 6 by a shift in the D curve from D to D*. Current price will rise accordingly, the extent of the increase depending on the elasticity of the D* curve; as the D* curve is drawn in Figure 6, price

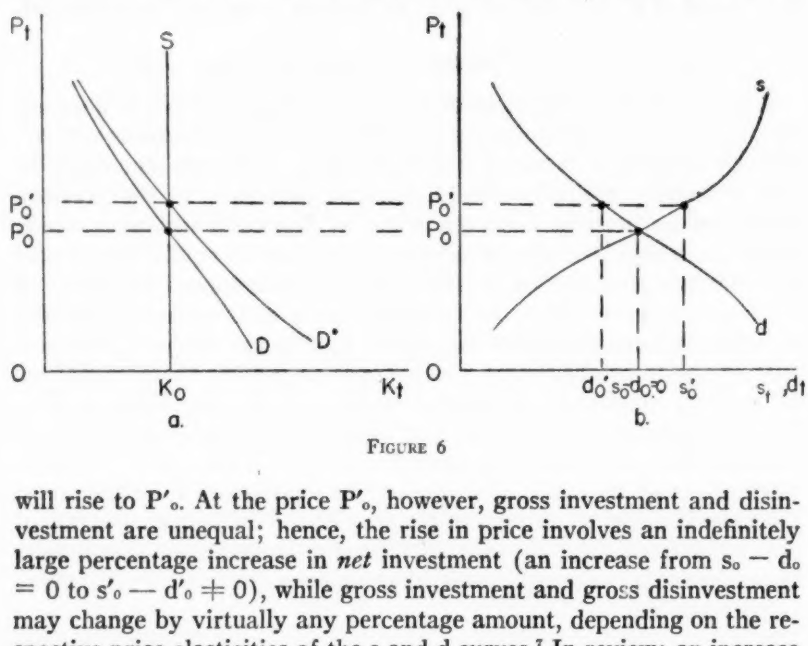


FIGURE 6

will rise to P'_o. At the price P'_o, however, gross investment and disinvestment are unequal; hence, the rise in price involves an indefinitely large percentage increase in *net* investment (an increase from $s_o - d_o = 0$ to $s'_o - d'_o \neq 0$), while gross investment and gross disinvestment may change by virtually any percentage amount, depending on the respective price elasticities of the s and d curves.[7] In review: an increase in consumer demand which is expected to be permanent will entail "acceleration" or "deceleration" effects upon current activity in a given durable good market. Our analysis indicates that these effects will be more pronounced: (*i*) the greater the initial increase in final demand;

[7] The stability of the market in Figure 6 is assured if one supposes that the (per period) quantity scale in Figure 6b is much smaller than the quantity scale in Figure 6a.

(*ii*) the less the degree to which increases in demand affect other markets; (*iii*) the greater elasticities of expectations; (*iv*) the smaller the price elasticity of demand for durable goods to hold; (*v*) the greater the price elasticity of supply of new capital goods; and (*vi*) the greater the price elasticity of demand for current disinvestment. It is worth observing that, in principle, any change in the given conditions of our model will involve acceleration and deceleration effects of the kind just outlined, the magnitude of which will be governed by the above considerations.

An initial change in consumer demand will ordinarily be reinforced by secondary repercussions which are induced by changes in the level of current activity. However, if an initial change in consumer demand is a "once-over" as contrasted with a "continuing" change, and if the market is stable, net investment will, after a time, cease to increase and eventually there will be a return towards a new stationary equilibrium position. Intermittent or continuous changes in demand, on the other hand, may involve permanently nonzero levels of net investment (permanent flow disequilibrium) and continued adjustments in other market quantities. All of this is in conformity with both common sense and established doctrine. The immediate analysis leads to no new results, but familiar conclusions are nevertheless amplified and defined with greater precision.

B. *Changes in the Rate of Interest*

In this section, we suppose that the only securities in the economy are perpetual bonds whose prices all change in the same proportion, so that the phrase "the rate of interest" may be used unambiguously.

A change in the rate of interest, like a change in prices generally, will alter the position of demand and supply curves in every market in the economy; but the main impact of such a change will fall on holders of durable goods, since a change in the rate of interest will alter market appraisals of the discounted (present) value of these commodities. This will entail a change in the current market price, and so a change in current investment and disinvestment. Perhaps the most instructive way to examine this matter is in terms of a "marginal efficiency of capital schedule." *Ceteris paribus,* to every alternative level of the rate of interest there corresponds a demand curve for durable goods to hold. This is illustrated in Figure 7a by the curves $D(r_0)$, $D(r_1)$, and $D(r_2)$, where it is assumed that $r_0<r_1<r_2$. If the existing stock of durable goods is, say, K_0, then to each alternative level of the rate of interest there corresponds a definite current price of durable goods, and so a definite level of gross investment and gross disinvestment. This is illustrated in Figure 7b (the effect of changes in the rate of interest upon

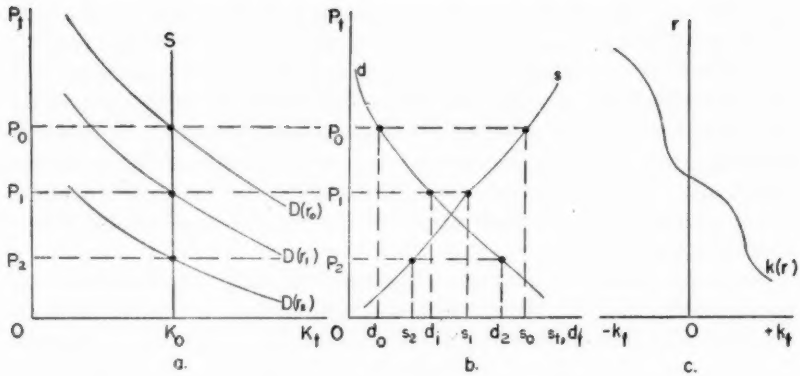


FIGURE 7

the flow supply and demand relations being assumed to be negligible); here, if the rate of interest is r_o, gross investment and disinvestment are s_o and d_o, respectively; if the rate of interest is r_1, gross investment and disinvestment are s_1 and d_1, etc. Hence, plotting alternative interest rates against corresponding levels of *net* investment in Figure 7c, we obtain a curve k(r) which Keynes would call a "schedule of the marginal efficiency of capital." This schedule is defined as of a moment of time and as of a given stock of durable goods; it shows for each possible level of the rate of interest the quantity of durable goods, k_t, which will be added to (or taken from) existing stocks during the current period. Strictly speaking, it is not an investment *demand* schedule since its shape and position depend, among other things, upon the shape of the supply curve of new durable goods.

Is it possible to say anything, *a priori,* about the shape of the schedule in Figure 7c? Clearly, the schedule will normally be downward sloping; but otherwise it may have almost any form. If stock demands are highly responsive to changes in the rate of interest (as will usually be the case for long-lived capital goods), the marginal efficiency of capital schedule will nevertheless be highly inelastic if the flow supply and demand curves are highly price-inelastic (as may or may not be the case for long-lived capital goods). If stock demands are not responsive to changes in the rate of interest (as may be the case with inventory stocks which are held for short periods of time), the schedule of the marginal efficiency of capital may nevertheless be highly elastic if the flow demand and supply curves are highly price-elastic, etc. Thus, it does not seem possible to say very much in general about the impact effects upon current investment of changes in the rate of interest. As regards the dynamic properties of a marginal efficiency of capital schedule, however,

it is interesting to note that net investment is *not* related to the *level* of the rate of interest as such, but rather to the difference between the current level of the rate of interest and that rate which would leave the market in stationary equilibrium. That is to say, if the rate of interest were constant at a level which temporarily induced net investment, the schedule of the marginal efficiency of capital would gradually shift to the left with the passage of time until it intersected the r axis at the given rate and net investment had disappeared. Thus, a once-over change in the rate of interest may permanently alter the level of the stock of durable goods and the levels of gross investment and disinvestment; but, *ceteris paribus,* the continuance of nonzero levels of net investment depends upon recurring changes in the rate of interest.[8]

C. *Changes in Technical Knowledge*

A change in technical knowledge affects our model in two distinct ways: via expectations and via changes in productive techniques. The initial impact of a change in knowledge is upon price expectations. In principle, this implies a shift of demand and supply functions in every sector of the economy. Ordinarily, however, one would expect shifts in flow supply and demand curves to be slight relative to shifts in stock demand curves, since the latter relations involve considerations relating to the possibly distant future. If a particular durable good market is originally in stationary equilibrium, a change in technical knowledge will lead to immediate flow disequilibruim; *i.e.,* investment or disinvestment will occur, depending on whether the new knowledge improves or worsens future prospects for the good in question. With the emergence of flow disequilibrium, the change in technical knowledge will give rise to secondary effects in the form of innovations; *i.e.,* the new knowledge will be introduced gradually into the economy in the guise of changes in techniques of production. Innovations will, in turn, lead to further revisions of price expectations which will, in turn, entail further innovations, etc. Moreover, the (flow) supply curve of new durable goods and the (flow) demand curve for previously produced durable goods will shift with changes in productive techniques as well as with shifts in prices in other markets of the economy. However, as in the case of changes in consumer demand and the rate of interest, a once-over change in technical knowledge will be followed (in a stable market) by an eventual return to a new stationary equilibrium position; a permanent condition of flow disequilibrium (economic development) can exist only if changes in technical knowledge are continuing, or at least intermittent.

[8] *Cf.* Hugh Rose, "Demand, Supply and the Price Level in Macroeconomics," *Rev. Econ. Stud.,* 1952-53, XX (1), 6.

MATHEMATICAL NOTE*

1. Consider a market for a single durable good (*i.e.*, assume that current and expected prices of all other goods are given). Denote by $D(p)$ the quantity (stock) of the good demanded to hold at the price p; by S_t the quantity (stock supply) of the good actually held at the beginning of the t^{th} period ($t=0, 1, 2, \cdots$); by $d(p)$ the quantity (flow) of previously produced units of the good demanded for consumption over a period at the price p; and by $s(p)$ the quantity (flow) of newly produced units supplied to the market over a period at the price p. Then for some initial value S_0 of the stock supply of the durable good, stock supply at the beginning of the n^{th} period is given by

$$S_n = S_0 + \sum_{t=0}^{n-1} [s(p_t) - d(p_t)],$$

where p_t is the price (assumed constant) over the t^{th} period.

As a condition for stock equilibrium in the market at the beginning of the n^{th} period we require that price equate stock supply and demand:

$$D(p_n) - S_n = D(p_n) - S_0 - \sum_{t=0}^{n-1} [s(p_t) - d(p_t)] = 0. \tag{1}$$

For *stationary* (stock-flow) equilibrium we require also that price equate flow supply and demand:

$$d(p_n) - s(p_n) = 0. \tag{2}$$

Whether or not (2) is satisfied, (1) suffices to determine the current price p_n of the durable good; since S_n does not depend on $s(p_n)$ or $d(p_n)$, the current price is independent of current levels of flow supply and demand. If both (1) and (2) are satisfied by p_n, then they continue to be satisfied if one takes $p_m = p_n$ for all $m \geqq n$.

Now assume that in the neighborhood of some stationary equilibrium price, $\bar{p}$, $D(p)$ may be expressed as a Taylor series

$$D(p) = D(\bar{p}) + \Omega(p - \bar{p}) + [\cdots],$$

while $e(p) = d(p) - s(p)$ may be expressed (using equation (2)) as

$$e(p) = \delta(p - \bar{p}) - \sigma(p - \bar{p}) + [\cdots] = \epsilon(p - \bar{p}) + [\cdots],$$

where

$$\Omega = \left.\frac{dD}{dp}\right|_{p=\bar{p}}, \qquad \delta = \left.\frac{dd}{dp}\right|_{p=\bar{p}}, \qquad \sigma = \left.\frac{ds}{dp}\right|_{p=\bar{p}}, \qquad \epsilon = \delta - \sigma,$$

* This note was prepared by R. W. Clower and D. W. Bushaw, who is instructor in mathematics at the State College of Washington, Pullman.

and [· · ·] represents terms of degree at least 2 in $(p-\tilde{p})$.

Substituting these expressions into (1), differencing the result in order to rid it of constants, and omitting the nonlinear terms,[9] we obtain

$$\Omega p_t - (\Omega - \epsilon)p_{t-1} - \epsilon\tilde{p} = 0,$$

which gives the market price in the period t as a function of market price in the period $t-1$.

The solution of this linear difference equation for the initial price p_0 is

$$p_t = (p_0 - \tilde{p})\left(1 - \frac{\epsilon}{\Omega}\right)^t + \tilde{p}. \tag{3}$$

For stability we require that $p_t \to \tilde{p}$ as $t \to \infty$. This will occur if and only if

$$\left|1 - \frac{\epsilon}{\Omega}\right| < 1, \quad i.e. \quad 0 < \frac{\epsilon}{\Omega} < 2.$$

The condition $0 < (\epsilon/\Omega)$ will be satisfied if the stock and excess flow demand curves are both downward sloping (or both upward sloping), otherwise not. Since, as one can easily see, the slope of the excess *flow* demand curve is proportional to the length of the market period, the condition $(\epsilon/\Omega) < 2$ (restricting the *relative* slopes of the stock and excess flow demand curves) will be satisfied if the market period is sufficiently short.

The nature of the approach towards equilibrium depends on the sign of the quantity $[1-(\epsilon/\Omega)]$ in (3); the approach is "direct" $[(p_t-\tilde{p})$ has a constant sign$]$ when this quantity is positive or zero, "spiral" $[(p_t-\tilde{p})$ alternates in sign$]$ when it is negative. It is directly evident from (3) that $p_t \to \tilde{p}$ as $t \to \infty$ more rapidly the smaller $|1-(\epsilon/\Omega)|$.

2. The argument in section 1 of this note is based on the assumption that trading activity occurs only at the beginning of each period. In some respects it is more realistic to suppose that trading is continuous, in which case we arrive at rather different conclusions.

As before, denote by $D=D(p)$ the stock demand function, and by $d=d(p)$ and $s=s(p)$ the flow demand and supply functions respectively (these are now instantaneous rates), where p is the market price. Then for some value a of t, stock supply at time $t(t \geqq a)$ is given by

$$S_t = \int_a^t [s(p_\theta) - d(p_\theta)]d\theta,$$

[9] We are concerned here only with finding a condition for the stability of the equilibrium price $\tilde{p}$. In such a situation it is permissible to ignore the nonlinear terms. See O. Perron, "Ueber Stabilität and asymptotisches Verhalten der Lösungen eines Systems endlicher Differenzengleichungen," *Journal für die reine und angewandte Mathematik* (1929), CLXI pp. 41–64.

where p_t is the market price at time t.

For equilibrium in the market at the instant of time t we require that

$$E_t = D(p_t) - \int_a^t [s(p_\theta) - d(p_\theta)]d\theta = 0 \tag{4}$$

and

$$e(p_t) = d(p_t) - s(p_t) = 0. \tag{5}$$

Condition (4) states that in equilibrium excess stock demand is zero; condition (5) that, in equilibrium, the level of existing stocks displays no tendency to change over time (excess flow demand is zero).

In what circumstances do conditions (4) and (5) determine a position of stable market equilibrium? To answer this question, we assume that the rate of change of price is a function of excess stock demand:

$$\frac{dp_t}{dt} = \phi\left[D(p_t) - \int_a^t [s(p_\theta) - d(p_\theta)]d\theta\right], \tag{6}$$

where $\phi(0)=0$ and $\phi'>0$. Assume also that in the neighborhood of the equilibrium price $\tilde{p}$, $D(p)$ and $d(p)-s(p)$ have the Taylor series

$$D(p) = D(\tilde{p}) + \Omega(p - \tilde{p}) + [\cdots]$$

and (using equation (5))

$$\begin{aligned} d(p) - s(p) &= (\delta - \sigma)(p - \tilde{p}) + [\cdots] \\ &= \epsilon(p - \tilde{p}) + [\cdots], \end{aligned}$$

where Ω, δ, σ, ϵ, and $[\cdots]$ have the same meanings as in section 1 above.

Differentiating (6) on both sides with respect to t, we obtain

$$\frac{d^2p_t}{dt^2} = \phi'[D(p_t) - S_t]\cdot\left[\frac{dD}{dp}\frac{dp_t}{dt} - s(p_t) + d(p_t)\right]. \tag{7}$$

Isolating the linear part of the right hand side of (7), we may write this equation in the form

$$\frac{d^2p_t}{dt^2} = K\left[\epsilon(p_t - \tilde{p}) + \Omega\frac{dp_t}{dt}\right] + [\cdots], \tag{7'}$$

where K is some constant, $K = \left.\frac{d\phi}{dE_t}\right|_{E_t = 0}$

So long as we are interested solely in the qualitative behavior of p_t near the equilibrium price $\bar{p}$, a well-known theorem from the theory of differential equations[10] assures us that we need to examine only the equation obtained by omitting the nonlinear elements from (7′):

$$\frac{d^2p_t}{dt^2} - K\Omega\frac{dp_t}{dt} - K\epsilon(p_t - \bar{p}) = 0. \tag{8}$$

The characteristic equation for this equation is

$$\lambda^2 - K\Omega\lambda - K\epsilon = 0; \tag{9}$$

its roots are

$$(K\Omega \pm \sqrt{(K\Omega)^2 + 4K\epsilon})/2.$$

The necessary and sufficient condition for stability is that these roots have negative real parts. This will occur if and only if $\Omega<0$ and $\epsilon<0$; these conditions will be satisfied if (i) the stock demand function is downward sloping and (ii) the flow supply and demand functions satisfy the usual Marshallian stability conditions (*i.e.*, the flow supply curve must be upward sloping, or else it must be less steep, referred to the price axis, than the flow demand curve.)

The nature of the approach towards equilibrium will depend on the relative magnitudes of $K\Omega^2$ and ϵ. There are two cases:

Case I. $K\Omega^2+4\epsilon \geqq 0$. Here the roots of the characteristic equation (9) are real, and we have a stable node; the approach towards equilibrium is direct.

Case II. $K\Omega^2+4\epsilon<0$. In this case, the roots of equation (9) are complex conjugates and we have a stable focus; the approach towards equilibrium is of a spiral (damped oscillatory) nature.

The probability of damped oscillations (Case II) is clearly less the greater K, the "speed of adjustment" of price to changes in excess stock demand.

[10] See, *e.g.*, S. Lefschetz, *Lectures on Differential Equations*. Annals of Mathematics Studies. No. 14, Princeton University (Princeton, 1948), p. 125 ff.

PRICE AND OUTPUT DETERMINATION BY A FIRM SELLING RELATED PRODUCTS

By Martin J. Bailey*

The general subject of price discrimination was extensively developed by Pigou and by Joan Robinson,[1] the latter having given definitive treatment to the now familiar case of discrimination in the sale of a single product in independent markets. A number of subsequent articles have appeared setting forth various applications and refinements of the theory.[2] Some of these have dealt, explicitly or implicitly, with the problems to be discussed in this paper, namely output and price determination by a firm selling several products whose marginal costs or whose demand curves are interrelated; but none of the previously published articles has given these problems a solution that was both complete in its analysis and expressed in a readily accessible (nonmathematical) form.[3] It is the purpose of this paper to present a graphical method of depicting (and deriving) the output-price solution for more or less complicated situations involving related commodities. In Part I a graphical method is shown for finding the prices charged for two com-

* The author is a graduate student at the Johns Hopkins University. He expresses gratitude to Professor Fritz Machlup, who suggested the subject of this article as a problem for solution, and who gave generous advice and criticism at every stage of preparation; and to Professor Harberger, who went over the manuscript several times, giving helpful advice for its improvement.

[1] A. C. Pigou, *The Economics of Welfare*, 4th ed. (London, 1932), pp. 275-317; Joan Robinson, *The Economics of Imperfect Competition* (London, 1933), pp. 179-202.

[2] For example J. R. Hicks, "The Theory of Monopoly," *Econometrica*, Jan. 1935, III, 1-20; M. W. Reder, "Intertemporal Relations of Demand and Supply Within the Firm," *Can. Jour. Econ. Pol. Sci.*, Jan. 1941, VII, 25-38; R. H. Coase, "Monopoly Pricing with Interrelated Costs and Demands," *Economica*, Nov. 1946, N.S. XIII, 278-94; C. G. F. Simkin, "Some Aspects and Generalizations of the Theory of Discrimination," *Rev. Econ. Stud.*, 1947-48, XV (I), 1-13; Edgar O. Edwards, "The Analysis of Output Under Discrimination," *Econometrica*, July 1950, XVIII, 163-72; and Eli W. Clemens, "Price Discrimination and the Multiple Product Firm," *Rev. Econ. Stud.*, 1951-52, XIX (I), 1-11.

[3] Hicks, *loc. cit.*, presented the mathematics. Reder, *loc. cit.*, presented in part the parametric method used below but did not push it to its conclusion; he used "net revenue" curves for products with related demands, showing output determination of one commodity on the assumption of profit maximization for the other commodity. Coase, *loc. cit.*, presented a graphical analysis showing pairs of output (or price) curves (the "combined market" curves given below), but he did not give clear or adequate discussion of how these curves are derived. It is hoped that these deficiencies are remedied in the present note.

modities, sold by a single firm, whose demand curves are interrelated.[4] A method is also developed for showing the effects of a per-unit tax on one of the commodities. In Part II the method of Part I is extended to more general types of problems; namely, the case of interrelated cost curves for products with independent demands, and the case of both interrelated costs and interrelated demands. (In all the cases considered, two commodities are assumed to be sold in at most two markets, since this is a large enough number to illustrate the general principles involved.)

I. *Two Products with Related Demand Curves*[5]

The term "discrimination" also appropriately applies to the pricing by a single firm of two products, where it takes account of the effect on revenue from one commodity of additional units sold of the other. The firm would do this in a variety of cases; for example, this analysis, adapted to each case, would apply to a firm producing two complementary or substitutable commodities, such as a lumber company selling various building materials; to a firm selling the same product under different labels to appeal to different self-differentiated markets (income levels); or to a firm selling a product to imperfectly separated geographical areas, such that the firm has to take account of "leakages."[6]

Since it is assumed that the sale of an additional unit of one commodity affects both its own price and the price obtainable for a given amount sold of the other commodity, it is useful to distinguish the net addition to revenue when both these effects are considered from marginal revenue in the ordinary sense, which depends only on the effect on one commodity's price of additional units of that commodity sold. The former concept will therefore be referred to as "differential revenue."[7] This quantity will be a function of the amount sold of the "other"

[4] The method used for this problem was fully developed and described, but not published, by Vincent Boland, Jr., in *Price Discrimination of Joint Products with Related Demands*, Senior thesis (University of Buffalo, 1941.) This was brought to my attention by Fritz Machlup. The present paper amounts essentially to an extension of Boland's method to more general types of problems.

[5] See n. 4.

[6] The problem of "leakages," however, can be more simply and directly handled by price deductions for cost of transport between markets.

[7] This term was suggested by Machlup. It should be noted that if the commodities are substitutes, the differential revenue for each will be less than the marginal revenue, whereas for complementary commodities the differential revenues will be higher than the marginal revenues. Whether the sale of an additional unit of one commodity will *raise* or *lower* the differential revenue curve for the other cannot be decided simply on the grounds of substitutability or complementarity, any more than one can presume whether or not the sale of an additional unit of a commodity will lower its own marginal revenue. The demand functions, on the other hand, will *always* be shifted downward by the sale of additional units of the "other" commodity if the two commodities are substitutes,

commodity, since interaction is bound to be mutual; therefore, it may be represented parametrically as a family of curves, each curve corresponding to a given amount sold of the "other" commodity.

The solution of the output determination problem in the case here outlined is best approached by supposing that the seller keeps one commodity continuously in equilibrium (by equating differential revenue

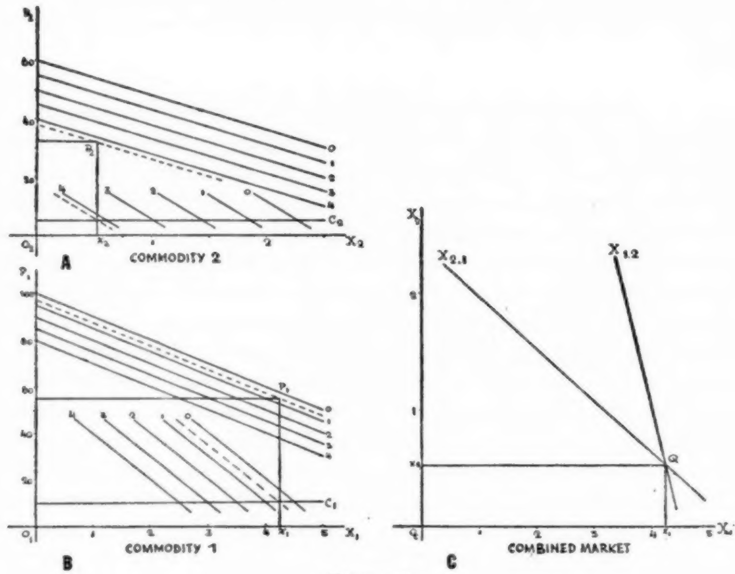


FIGURE 1

to marginal cost) as he varies the amount sold of the other. Subject to this restraint he will select that output of the second commodity for which it also is in equilibrium, at which point he will be in full equilibrium. The graphical method for obtaining this result is shown in Figure 1, where for simplicity it is assumed that each commodity is

and upwards if they are complements. (That is, this is the way in which substitutability and complementarity, in this paper, are *defined;* Hicks' definitions are not employed.)

It should also be noted that at any combination of outputs the shift in the differential revenue curve for Commodity 1 resulting from the sale of an additional unit of Commodity 2 must be equal to the shift in the differential revenue curve for Commodity 2 resulting from the sale of an additional unit of Commodity 1. That is $\frac{\partial^2 TR}{\partial x_1 \partial x_2} = \frac{\partial^2 TR}{\partial x_2 \partial x_1}$.

The differential revenue curves could, in priciple at least, have been derived by geometrical construction from the demand curves. This would be carrying geometrical purity a little far, however; instead they have been obtained algebraically by taking $\frac{\partial TR}{\partial x_i}$ for each x_i $(i = 1,2)$, which in turn is known from the equations of the demand curves.

produced at constant marginal cost. The higher, closely spaced curves are the demand curves, a different curve for each amount sold of the other commodity; this amount (of the other commodity) is indicated by the number labeling each demand curve. The same applies to the differential revenue curves, which are the lower, more widely spaced curves. Then for each output of Commodity 1, there will be an equilibrium output of Commodity 2, indicated by the intersection of the appropriate Commodity 2 differential revenue curve with its marginal cost curve. In the combined market, in Figure 1C, all such outputs for Commodity 2 are indicated by the Curve $X_{2.1}$, which shows the amounts sold of Commodity 2 as a function of the amount sold of Commodity 1. Similarly, the curve $X_{1.2}$ shows the amounts sold of Commodity 1 as a function of the amounts sold of Commodity 2, where Commodity 1 is assumed to be kept in equilibrium as the amounts of Commodity 2 sold are varied. The intersection of these two curves at Q is the point of simultaneous equilibrium for both commodities.[8] The relevant differential revenues for the equilibrium outputs are shown in Figures 1A and 1B as dashed lines, and the equilibrium outputs are indicated by the intersections of these dashed lines with the marginal cost curves, at outputs O_1x_1 and O_2x_2. Similarly the equilibrium demand curves are shown as dashed lines, and the equilibrium prices are found to be x_1p_1 and x_2p_2.

In order to show the effects of a tax on one of the commodities, it is convenient to arrange the diagrams as shown in Figure 2. Commodity 1 is in the usual position in the first quadrant; but Commodity 2 faces downwards in the third quadrant, so that its quantity axis X_2 adjoins the fourth quadrant, as does the X_1 axis, and so that its price axis P_2 adjoins the second quadrant, as does P_1. Thus the fourth quadrant serves as a "combined market" regarding the quantities, and the second quadrant serves as a "combined market" regarding the prices. The quantity curves shown are the same as before; however, the price curves, in the second quadrant, require further explanation. First it should be noted that each point on either of the quantity curves $X_{1.2}$ or $X_{2.1}$ represents a pair of values, one for X_1 and one for X_2, and this pair of values is sufficient to determine a pair of prices, a value of P_1 and a value of P_2. For example, consider Q', a point on $X_{2.1}$. Draw $Q's'$ parallel to the X_1 axis and $Q'p'$ parallel to the X_2 axis. Since Ox'_1, the quantity at Q' of X_1, is just under four units, the relevant demand curve for Commodity 2 is a line (not shown), just above the "4" line, which intersects $Q's'$ in s'. Similarly the relevant demand curve for

[8] This "combined market" device, originally used by Edgeworth (see *infra*, n. 14), was used by Coase (*op. cit.*) to show the effects under various assumptions of an excise tax on one commodity. (See *supra*, n. 3.)

Commodity 1 intersects $Q'p'$ in p'. Then x'_2s' and x'_1p' are the prices of Commodities 2 and 1, respectively, corresponding to the point Q'. Now draw $p'A'$ parallel to the P_2 axis, and draw $s'D$ parallel to the P_1 axis, intersecting each other in R'. Then R' is the point representing the price-pair which corresponds to the quantity-pair represented by Q'.

Thus to each of the quantity curves there corresponds a locus of price-pairs. These two loci are represented in Figure 2, second quadrant, by AB, which corresponds to $X_{1.2}$, and by DE, which corresponds to $X_{2.1}$. Their intersection at R corresponds to the intersection at Q of the quantity curves, and gives the equilibrium price-pair.[9] Now if a per unit tax is levied on Commodity 1, raising its cost curve from C_1 to $C_1 + T_1$, a new set of equilibrium outputs of X_1 (for variable X_2) will result, giving the new quantity curve $X'_{1.2}$; the new intersection at Q' gives the equilibrium pair of outputs after the tax. Correspondingly, AB is shifted to $A'B'$; and R' shows the equilibrium price-pair after the tax.[10]

However, an entirely different method might be used to determine the equilibrium price-pair, and to find the results of a tax on one commodity. That is, we might imagine that the seller sets one *price* and varies the other *price* in such a way as to keep its market in equilibrium (rather than working with quantity variations). In order to do this, the demand curves would have to be considered analytically as showing quantity as a function of price, rather than the other way around;[11] and use would have to be made of the notion of the differential revenue attendant upon a slight change in price, where the other price (rather than the other quantity) is held constant.[12] Likewise the concept of marginal cost for a change in price must be introduced: that is, the

[9] That the price curves AB and DE be horizontal and vertical, respectively, as drawn, depends on three special considerations: (1) that the cost curves be horizontal, *i.e.*, constant, (2) that the cross partial derivatives of demand be equal, and (3) that the demand curves be linear. The second condition will hold if the commodities are being sold to profit-maximizing firms, so that no income effects are present, or if any income effects that are present are equal.

[10] In the case here considered, the price of Commodity 1 is raised by one-half the amount of the tax, and the price of Commodity 2 is unaffected. This will always be the case when the conditions in note 9 are met. The shift in $X_{1.2}$ clearly depends on the slopes of the differential revenue curves.

[11] While it is usual to *think* of quantity as a function of price, it is also usual to treat them diagrammatically the other way around in monopoly pricing: the marginal revenue and cost curves show what happens for a small change in *quantity*.

[12] That is, $\frac{\partial TR}{\partial_1 p} = x_1 + \frac{p_1 \partial x_1}{\partial p_1} + \frac{p_2 \partial x_2}{\partial p_1}$. Analogously for the ordinary case of a single commodity (independent), marginal revenue for a change in price is $MR_p = x + \frac{pdx}{dp} = x(1+e)$ where e is the elasticity of demand.

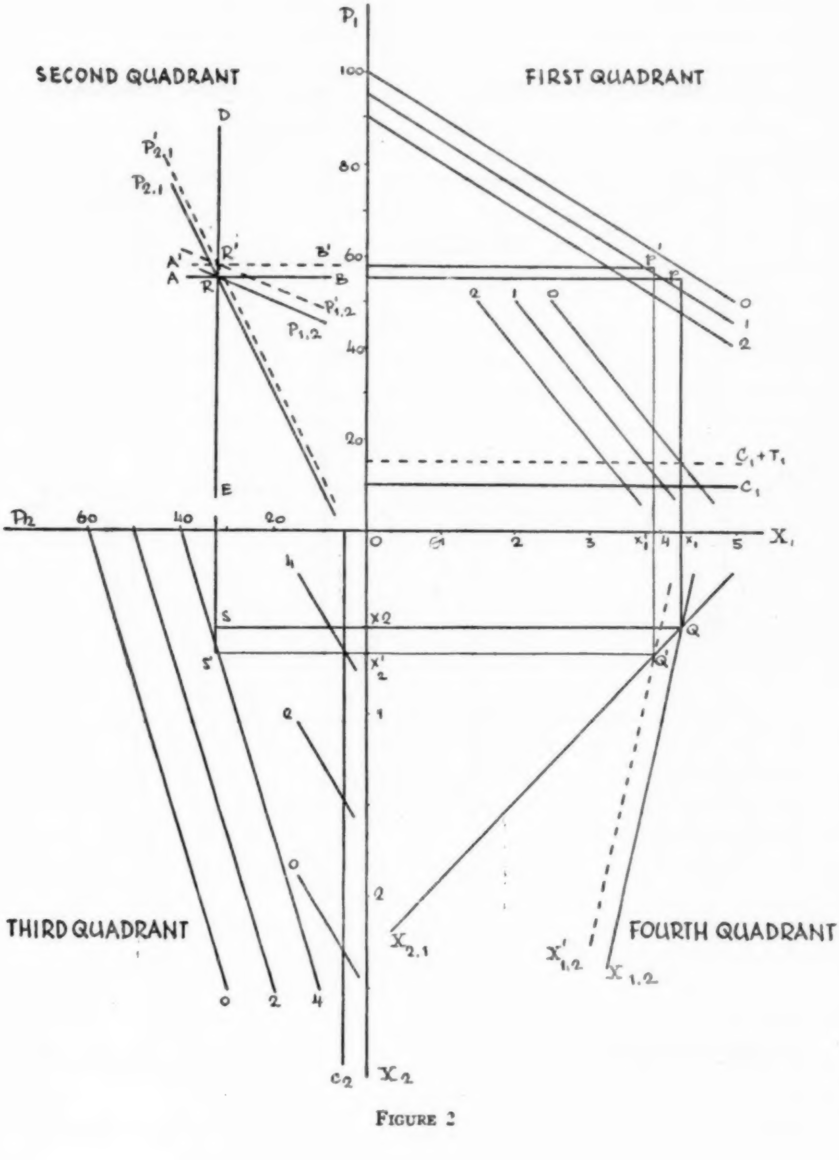
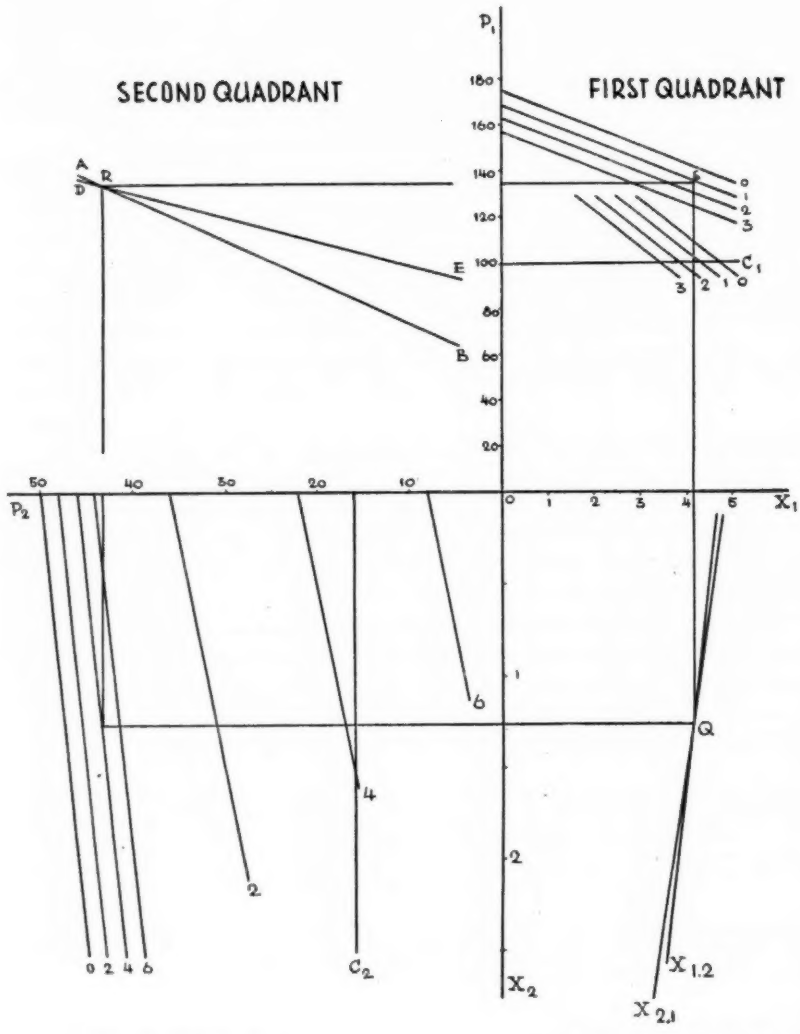

SECOND QUADRANT
FIRST QUADRANT
THIRD QUADRANT
FOURTH QUADRANT
P1
P2
X1
X2
C1
C1+T1
C2
D
E
A
B
A'
B'
R
R'
S
S'
Q
Q'
P2.1
P'2.1
P1.2
P'1.2
X2.1
X1.2
X'1.2

FIGURE 2



SECOND QUADRANT
FIRST QUADRANT
THIRD QUADRANT
FOURTH QUADRANT
P_1
P_2
X_1
X_2
C_1
C_2
$X_{1.2}$
$X_{2.1}$
A
R
D
E
B
Q
180
160
140
120
100
80
60
40
20
50
40
30
20
10
0
1
2
3
4
5

FIGURE 3

induced change in the quantity sold of one commodity times its marginal cost, plus the induced change in the quantity sold of the other commodity times its marginal cost. Where the demand functions are linear and the cost curves are constant, as in Figure 2, the marginal cost curve for a change in price would also be a constant, since all four terms entering into it are constants;[13] however, if there were nonlinearity in the demand functions, or if either marginal cost curve were rising or falling rather than constant, the marginal cost for a change in one price would be a function of the assumed value of the other price, and would have to be represented parametrically. (A case where both demand curves and cost curves are parametric "families" is shown in Figure 5.)

Now if the seller thinks in terms of price variation, rather than quantity variation, it is these two concepts, *i.e.*, marginal revenue for a change in price and marginal cost for a change in price, which he will have to use. Proceeding as in the case of quantity variation, we may suppose that he keeps one market in equilibrium, by equating price marginal revenue to price marginal cost, as he varies the other price. This procedure will yield one price as a function of the other, in the same way as the curves showing each quantity as a function of the other were previously obtained. These price curves are shown in Figure 2 in the second quadrant, labelled $P_{1.2}$ and $P_{2.1}$; their intersection at R, where both markets simultaneously are in price equilibrium, is of course the same price equilibrium point as that obtained when quantities were varied as the independent variables.

It can be seen that if a tax is levied on one of the commodities, as before, *both* "price curves" will be affected, since the cost of the affected commodity enters into the price marginal cost for both prices; hence, in the second quadrant of Figure 2, both price curves have been shifted to the new positions $P'_{1.2}$ and $P'_{2.1}$, with the new intersection R' (again agreeing with the previous result) as a consequence of the tax on Commodity 1.

The main conclusion from the foregoing discussion of alternative procedures is that the method of taking quantities as the independent variables, rather than prices, is much the simpler and more direct method of analyzing the behavior of the single seller. The introduction

[13] For the marginal cost for a change in price, we have $\dfrac{\partial C}{\partial p_1} = \dfrac{\partial C}{\partial x_1} \cdot \dfrac{\partial x_1}{\partial p_1} + \dfrac{\partial C}{\partial x_2} \cdot \dfrac{\partial x_2}{\partial p_1}$.
If demand is linear, both $\dfrac{\partial x_1}{\partial p_1}$ and $\dfrac{\partial x_2}{\partial p_1}$ will be constants (and similarly for p_2). Therefore, if costs are constant, then "price marginal cost" will be also. If on the other hand, each commodity's marginal cost curve is a function of that commodity's output, both commodities (and therefore both prices, taken as the independent variables) will enter into the above function.

of the concepts of price marginal revenue and price marginal cost does not particularly help matters, but merely gives a more roundabout process for producing the same result. The interrelationships of these various cost and revenue concepts are interesting, however, and they may be pedagogically useful.

An application of the foregoing technique is shown in Figure 3, which illustrates the special case of Edgeworth's taxation paradox.[14] A set of demand functions have been chosen which satisfy the restrictions that must be met in order for that phenomenon to occur,[15] namely, that an excise tax on one of the commodities should have the effect of lowering the prices of both.

As in Figure 2, the price loci AB and DE in Figure 3 are the sets of price pairs corresponding to the quantity pairs along $X_{1.2}$ and $X_{2.1}$, respectively. However, in this case the two price lines slope toward the origin. Consequently, if the AB line is raised, the intersection R will slide down DE, and both prices will be lowered. What, then, is the effect of an excise tax on Commodity 1? As was observed in the previous problem, the tax will shift $X_{1.2}$ to the left, so that for each value of X_2 a smaller output (than without the tax) would be determined for X_1. Since the commodities are substitutes, the decrease in X_1 will, for constant X_2, tend to raise P_2 as well as P_1. However, since a small variation in X_1 affects its own price more than it affects P_2, the effect of the shift in $X_{1.2}$ will be to raise AB. Therefore the price of both commodities will be lowered by the tax.[16]

II. *Output Determination under Related Costs*

This final Part will deal with the application of the technique described above in Part I to other types of cases of related products. The cases discussed include commodities with related costs but independent demands,[17] and the general case of commodities with both related costs and related demands.

[14] First noted by F. Y. Edgeworth in "Theoria pura della monopolia," *Gior. d. Econ.*, Ser. II Vol. XV (July 1897), reprinted in translation in *Papers Relating to Political Economy* (London, 1925), I, 126-35.

[15] These restrictions are given, along with a detailed mathematical discussion of the case under the assumption of equal cross-partial elasticities of demand, by Harold Hotelling, "Edgeworth's Taxation Paradox and the Nature of Demand and Supply Functions," *Jour. Pol. Econ.* Oct. 1932, XL, 577-616. Hotelling shows that this phenomenon cannot occur if the monopolistic seller faces linear demand functions with equal cross-partial derivatives; hence the present case had to be constructed with very unequal cross-partial derivatives, which presumes the existence of unequal income effects. The demand equations used for this example were: $p_1 = 175\text{-}8x_1\text{-}6x_2$, and $p_2 = 50\text{-}x_1\text{-}2x_2$.

[16] Similar analysis for an excise tax on Commodity 2 will show that DE would be raised, and hence the prices of both commodities would be raised by the tax.

[17] A related problem of some interest is that of strictly joint products, where the propor-

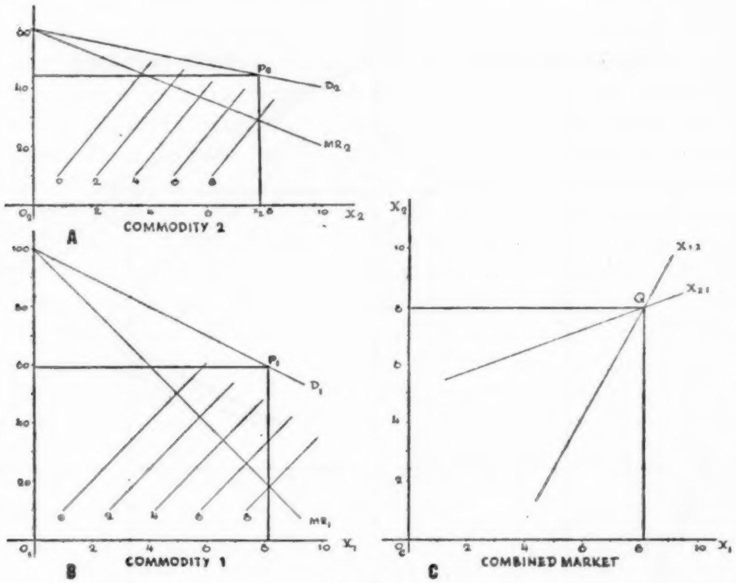


FIGURE 4

The case where costs are related, but demand curves are not, is presented in Figure 4. Here the "differential cost" of one commodity is drawn lower for larger outputs of the other commodity. This need not always be the case, but it must be true over the greater part of their joint cost surface, or else the two commodities would not be produced together. The solution of this case involves no difference in principle from the previous one; for each possible output of one commodity, it may be supposed that the seller equalizes differential cost and marginal revenue in the other market, which gives the amounts sold of the other commodity as a function of the amounts sold of the one arbitrarily varied. The combined market, showing the two quantity curves, gives the equilibrium pair of quantities at their intersection Q; and for these quantities the equilibrium prices may be obtained directly from the demand curves.

The effect of an excise tax would be to raise the taxed commodity's family of cost curves, and therefore to reduce the equilibrium amount

tions produced cannot be varied. Price determination in a single market for each is given by G. J. Cady, *Entrepreneurial Costs and Price* (Evanston, 1946) pp. 118-26. By a routine combination, doubtless performed in many seminar rooms, of this analysis with that of price discrimination developed by Joan Robinson (*op. cit.*, pp. 181-83) one can also analyze price determination for strictly joint products with discrimination between markets for each product.

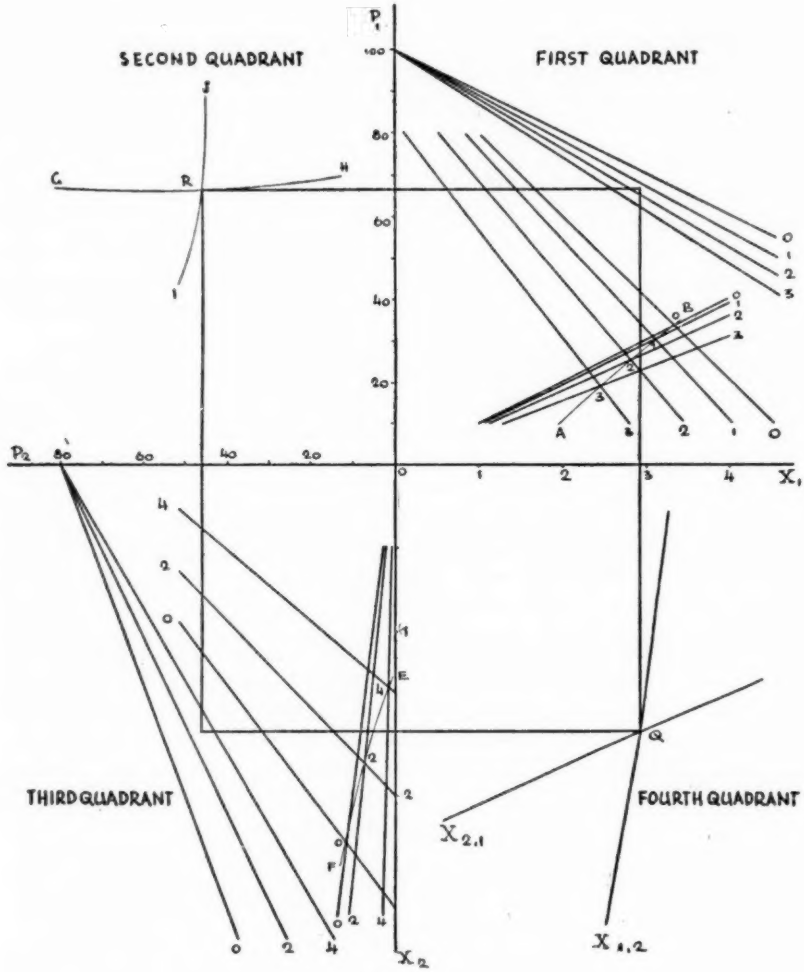


FIGURE 5

of that commodity for each amount of the other commodity. Hence, if Commodity 1 were taxed, $X_{1.2}$ would be shifted downwards (and if Commodity 2 were taxed, $X_{2.1}$ would be shifted to the left) so that at the new equilibrium less would be sold of both commodities,[18] and both prices would be raised.

[18] As Coase has pointed out (*op. cit.*), this will occur if the commodities are complementary; if so the two curves will be of positive slope. More precisely, the two curves will be of positive slope if the effect on the differential cost of X_1 of a unit change in X_2

Similar reasoning applies to Figure 5, which represents two commodities that are substitutes in consumption but complements in production. Both the differential cost and the differential revenue curves for one commodity shift downwards when more of the other commodity is sold. In the first and third quadrants the lines AB and EF are the loci of intersection of pairs of differential cost and differential revenue curves, where each member of a "pair" of curves corresponds to the same output of the other commodity; for example, the intersection on AB marked "3" is the intersection of that differential cost curve and that differential revenue curve which obtain when three units of Commodity 2 are sold. The curve EF is defined in a manner symmetrical to the definition of AB. Each of these curves gives the "equilibrium" output of its commodity as a function of the output of the other commodity, and so defines, as before, the corresponding quantity curve in the combined market, fourth quadrant. The equilibrium pair of outputs is given by the intersection at Q, in the fourth quadrant, of the two quantity curves thus derived. In the second quadrant, GH is the price locus corresponding to the quantity line $X_{1.2}$, and IJ corresponds to $X_{2.1}$.

It can be seen that, if the quantity curves were in the first quadrant, they would be of negative slope; an increase in the sale of one is associated with a decrease in the sale of the other (along either of these lines). Thus, in the example chosen here, their jointness of costs is more than offset by their competitiveness in the market.[19]

A tax on Commodity 1 raises its cost curves and raises AB, shifts $X_{1.2}$ to the left, and raises GH; its effect in this example is therefore to raise the price of Commodity 1 and slightly to lower the price of Commodity 2. A tax on Commodity 2 would have effects symmetrical to those of a tax on Commodity 1.

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is negative. Where demands are related but costs are not, the corresponding condition is that the two curves will be of positive slope if the shift in one commodity's differential revenue curves caused by the sale of an additional unit of the other commodity is positive. (In both these cases, it should be recalled that the "effects" mentioned are identical to the reverse effects obtained by interchanging the subscripts. This applies also to the argument below, n. 19.) In the linear case of related demands, an equivalent condition can be stated that the slopes of the quantity lines will be of the same sign as the sum of the effect on P_1 of a unit change in X_2 plus the effect on P_2 of a unit change in X_1.

[19] Analogously to the condition mentioned in the previous footnote, the relevant condition that the quantity curves will (in the first quadrant) be of negative slope is that the following be negative: the effect on the differential revenue of Commodity 1 of a unit change in X_2 minus the effect on the differential cost of Commodity 1 of a unit change in X_2. It can be seen by inspection of the diagram that this sum determines the sign of the slope of AB, which in turn determines the sign of the slope of the X_1 quantity line (and analogously for X_2).

EXCHANGE FLEXIBILITY AND THE STABILITY OF STERLING

By Samuel I. Katz*

Recent discussion as to whether a freeing of exchange rates would be conducive to a material freeing of international trade and payments increases interest in Britain's recent limited changes in foreign exchange arrangements. Late in 1951, the British authorities introduced a widened spread between the buying and selling rate of the pound, and turned over to the London exchange market responsibility for providing forward facilities for commercial needs. The revival of a private exchange market has contributed to the subsequent resilience which the pound has shown in the foreign exchange market. The step has also facilitated the recent agreement establishing arbitrage facilities among eight European currencies and has, thereby, helped to recreate the technical apparatus in the exchange markets of western Europe in preparation for further steps toward convertibility.

I. *Narrow Spread in Spot Rates for Sterling*

Despite the authorization of a 2 per cent spread in spot rates under Article IV of the Fund agreement, the British authorities maintained only narrow spreads between the official rates at which the Bank of England was prepared to buy and sell foreign exchange until a major change in direction took place late in 1951. Until the end of 1946, the Bank's official selling rate for the United States dollar was 4.02½ and its buying rate \$4.03½ to the pound; early in 1947, the spread was narrowed to \$4.02¾ and \$4.03¼. After September 1949, there was a further reduction, the postdevaluation rates being \$2.79⅞ and \$2.80⅛.[1]

The narrow spread in the Bank's trading rates limited the extent to which uncertainty could be introduced into trading in spot exchange. Consequently, whenever the outlook for sterling became less favorable,

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[1] Under Article IV, Section 3 (i) of the Fund agreement which authorizes fluctuations in spot transactions within one per cent on either side of a currency's declared par value, the outer limits for spot trading with a \$4.03 par value would have been \$3.99 and \$4.07. With a \$2.80 par value, the outer limits became \$2.772 and \$2.828.

speculation against the pound tended to emerge, encouraged by the fact that a short sterling position was virtually riskless; the easy-money policy facilitated borrowing by foreigners in the London market and the prevailing lower short-term rates meant that such financing would be at a lower cost.[2] As a result of these incentives, substantial flows of short-term funds, generally of a disequilibrating character, occurred throughout the postwar period, despite the existence of exchange controls which blocked short-term capital movements of the pre-1939 character.

This speculation took the form of leads and lags in sterling payments by merchants in connection with their normal trading operations.[3] The merchant could speculate against the pound merely by maintaining an uncovered sterling position: he could assume a future sterling liability without obtaining sterling in the spot or futures market at the prevailing exchange rate.[4] When the sterling area's balance of payments was in difficulty, the merchant could be certain that the pound would not be appreciated to a higher par value; the par value might remain unchanged or be lowered. The narrow spot spreads further limited the risk in a short sterling position; the cost of spot sterling at some future date would not be more than the current cost because the Bank of England was committed to trade at the fixed selling price. On the other side, the merchant could shift into a long sterling position whenever the improved position of the sterling area raised the possibility that the par value of the pound might be raised. Thus, whenever there was a prospect that the sterling rate might be altered, the narrow spot spread in effect encouraged merchants to carry out short-term speculation of a disequilibrating character.

Furthermore, the exchange arrangement required the monetary authorities to provide spot exchange for commercial purposes and, for forward exchange, to assume substantial risks as well. Upon the introduction of wartime controls in 1939, private trading in dollar exchange was terminated in London and the Bank of England supplied dollars to

[2] Where there is a distinct prospect of a currency adjustment, speculation is likely to take place regardless of the technical arrangements in effect in the foreign exchange market. The distinctive weakness of the system with a narrow spot spread proved to be that it made postponement of sterling payments virtually riskless and, hence, encouraged short sterling positions.

[3] This type of sterling speculation is analyzed in my article, "Leads and Lags in Sterling Payments," *Rev. Econ. Stat.*, Feb. 1953, XXXV, 53.

[4] The foreign (non-British) merchant could effect a short-term capital movement by speeding up or delaying sterling-currency payments; by altering the credit terms on commodity transactions; and by shifting into sterling to finance the movement of commodities. The British merchant could speculate by shifting (within the limits allowed under Britain's export and import regulations) the timing of his foreign currency or merchandise transactions.

the market. Under the wartime arrangements, the Bank was committed to a selling rate for the United States dollar of \$4.02½ and a spot buying rate of \$4.03½ to the pound. Commercial banks, in turn, supplied dollar exchange to customers at the official rates and received a handling commission for their services. In forward exchange, there were neither private dealings nor a market for trading. Rather, the Bank of England stood ready to supply unlimited amounts of forward dollars for approved commercial transactions at an unvarying nominal commission of ¼ U.S. cent per month. The slight charge of about 1 per cent per annum encouraged merchants to use this facility liberally whenever they sensed exchange rate uncertainty. In the New York market, the spot rate was maintained within the Bank of England's official rates. But a "free" forward market existed in New York, with rates determined by local market conditions.

Under postwar conditions, the Bank's open-end commitment to provide forward dollar cover at a fixed price and for a nominal fee proved to be an open invitation for commercial interests to place upon the Bank responsibility for carrying large unbalanced positions in forward exchange. The Bank soon found that most of its forward trading, particularly during critical periods, was in one direction.[5] When sterling was under pressure, for example, British importers were more anxious to cover forward dollar needs than British exporters were eager to sell forward dollar earnings. When sterling appreciation was anticipated, the Bank found its position unbalanced in the opposite direction.[6]

II. *Introduction of a Wider Spot Spread*

In a major change in policy effective December 17, 1951, the Bank of England decided to get out of the forward exchange business and to pass over to the London exchange market responsibility for providing forward cover.[7] The Bank ceased to quote official buying and selling

[5] See, for example, "The New Foreign Exchange Market," *The Banker*, Jan. 1952, XCVIII, 20-21.

[6] The co-existence of a "free" New York market, where rates fluctuated, with a pegged forward "market" in London contributed to the Bank's one-sided experience in dollar futures, since American traders would make use of the Bank's forward facilities for approvable commercial transactions when the fixed London rates were more advantageous than those in New York. Based upon the Bank of England's charge of ¼ cent per month, London banks would purchase 90-day sterling at \$2.78⅝ and would sell at \$2.81⅜. Since the 1949 devaluation, 90-day sterling has risen above \$2.81⅜ only during September and October 1950 when rumors of sterling appreciation produced a general movement into sterling. On the other side, the 90-day rate in New York declined below \$2.78⅝ only briefly during October and November and again in December 1951. Thus, the Bank found itself buying forward dollars from New York merchants when sterling might appreciate and purchasing sterling futures when sterling devaluation was a possibility.

[7] Descriptions of the changes introduced into the London foreign exchange market may be found in: "The Foreign Exchange Market," *Economist* (London), Dec. 22, 1951, pp. 1538-39; "Exchange Control and the Foreign Exchange Market," *Midland Bank Rev.*, Aug.

CHART I. STERLING RATES IN THE NEW YORK MARKET

rates for forward delivery and, for the first time since 1939, London commercial banks were authorized to deal in forward contracts as principals, at rates set by market conditions. The British regulations were also relaxed to allow commercial banks to maintain, within certain limitations, open positions in forward exchange. They were no longer "required to cover open positions with the Bank of England although they retain the right to do so, by means of spot transactions, if they wish."[8] The scope of private trading in spot dollars was also substan-

1952, pp. 1-4; and "The New Foreign Exchange Market," *The Banker*, Jan. 1952, pp. 20-25.

[8] Notice of Foreign Exchange Committee (London), "Dealing in Certain Foreign Currencies," Ref. No. 441, Dec. 15, 1951, p. 1. While open positions maintained by the commercial banks are subject to agreement with the Bank of England, they are for the bank's own account and risk. Thus a British bank with a futures dollar contract could maintain an open position or could cover in either of these ways: (a) by means of a spot or forward transaction with another commercial bank in the sterling area; (b) by means of a spot or forward transaction with a North American bank against sterling to be paid to or from an American Account; or (c) by means of a spot transaction with the Bank of England. A comparison between forward exchange trading in 1939 and in 1951 may be found in Paul Einzig, "Forward Exchange Then and Now," *The Banker*, Feb. 1952, pp. 83-87.

tially widened. The Bank widened its spot rates to \$2.78 on the selling and \$2.82 on the buying side; within this range, commercial banks were allowed to deal in spot dollars for bona fide commercial transactions with their own customers, with other sterling area banks and, subject to limitations established by the authorities, with banks in the American Account Area.

Widening the spot spread had no immediate impact upon the short-term speculation against the pound. On the contrary, during January and February 1952, U.S. interests increased their sterling borrowings from British institutions.[9] Continued short-sterling positions together with the sterling area's large deficit on current dollar payments underlie the weakness of sterling in early 1952 in Chart I, which shows the spread (high and low) quotation on a weekly basis for spot and, in the lower section, for 90-day sterling. With spot sterling remaining at the official support level around \$2.78, Hawtrey observed at the end of February that "the step recently taken towards a free foreign exchange market has meant . . . merely a further devaluation of the pound by a fraction of one per cent."[10]

However, a rise in the sterling rate occurred during the second week of March 1952 (see Chart) following the March 11 rise in the Bank of England's discount rate from 2½ to 4 per cent. The initial impulse to the mid-March jump was largely technical in nature. Speculators who had participated in the heavy selling of sterling on December 14, 1951 when 90-day sterling fell to \$2.71 (see Chart) were caught in a squeeze since, under market practice, delivery on their contracts was due no later than March 17. On March 11, however, "the budget news forced a feverish scramble to enlarge sterling balances by banks and commercials. More particularly, it provoked a "squeeze" against those who had gone short of the pound and hurried to cover those commitments."[11] With operators seeking sterling to cover maturing commitments under these conditions, spot sterling was quoted at \$2.78¼ on March 11, \$2.79⅛ on the following day and \$2.80⅛ on March 13, 1952.

But these technical factors can explain little more than the initial upward push. Thereafter, the continued strength in the sterling rate during April and early May 1952 reflected the impact of the budget and the new monetary policy upon the market. Short sterling positions

[9] According to statistics published in the (monthly) *Treasury Bulletin*, U. S. Treasury Department, U. S. short-term liabilities payable in sterling to the United Kingdom increased sharply between Nov. 1951 and Feb. 1952 while U. S. short-term claims payable in sterling remained at only a fraction of the levels recorded during the early part of 1951.

[10] Letter, London *Times*, Feb. 28, 1952, p. 5.

[11] *New York Times*, Mar. 17, 1952, p. 29. The report adds: "The movement coincided almost to a day with the three-month interval from Dec. 14 last, when relaxation of sterling controls and the turning of forward trading to banks precipitated heavy selling."

which had been widely held had to be covered gradually and sterling for current requirements proved to be difficult to obtain. The rise in Bank rate was the signal for a general rise in short-term rates in the London market; hence, speculation against the pound, which had taken the form of borrowing sterling at the lower London interest rates, was made less attractive; London accommodation cost more and, perhaps more important, became more difficult to obtain.[12]

But sterling speculation became more costly in another way: merchants could no longer take the future price of spot exchange for granted, as they had been able to do during the preceding period when the pound remained around the support level. Since spot sterling could —and in the last week of March 1953 did—approach the $2.82 limit, the wider spot spread introduced an added risk factor into the foreign exchange market, which encouraged prudent traders to reduce uncovered commitments. Market rumors that the British authorities were intending to "set the pound free" added to the uncertainty.

In short, the checkered movement of spot and 90-day sterling since December 1951 shown in Chart I reflects adverse as well as favorable external influences upon sterling's market position. If the running off of short-sterling positions following the intensification of monetary restraint helps to explain the strength of sterling from March to early May 1952, its weakness from late May to October reflects market reaction to the sterling area's continuing external difficulties, particularly with the European Payments Union countries. The pound's strength in the latter part of 1952 and early 1953 can be attributed to the reduced availability of sterling under the new monetary measures and to the improved external position of the sterling countries as affected by severe import restrictions. Despite the market resilience which sterling has shown, however, Britain's experience in the early months of 1952 stands as a warning that widening the spot spread can lead to disappointing results when the currency does not rise above the official support level.

III. *What Wider Trading Limits Really Mean*

In current discussion of exchange rate policy, there is confusion about the significance of "freeing" a currency or letting it "float" or "widening" the spot rate. It is evident that there are at least three distinct concepts of what widening the official spread can mean.

Perhaps the least generally discussed concept looks upon "freeing" the exchange rate (that is, abandoning the par value and withdrawing fixed official trading rates) as a temporary transitional device prior to

[12] In late February, the Bank of England had also cut back the term of drafts under letters of credit subject to exchange control from 120 to 90 days and restricted refinance facilities available to foreigners in the London market.

the establishment of a new fixed par value. At a time when the established rate is clearly out of line or where a major relaxation of import or currency restrictions is about to be introduced, the exchange rate may be freed so that market sentiment can help to guide the authorities to the new par value. If this conception is clearly understood to cover only a transitional program, with the rate fluctuation limited in time, it can be quite consistent in the long run with the objective of exchange stability of the fixed par-value system of Bretton Woods.

More widely held is the view, which runs counter to the ideas underlying the Bretton Woods arrangements, that fluctuating rates (abandoning a par value and withdrawing fixed official trading quotations) can be used as an automatic means of effecting balance in a country's external payments, either with or in the absence of controls. This often-stated case holds that the adoption of a freely fluctuating pound would make possible an automatic balance in Britain's external accounts: the reasoning is based upon the proposition that there is a price at which *any* pair of demand and supply schedules for sterling can be brought together and the exchange market cleared.[13] Although some of the implications of a freely fluctuating currency will be considered at a later stage, an evaluation of this hypothesis would lead us away from the main theme of this study.[14]

Under the third concept, the change in exchange arrangements is looked upon merely as a technical operation with limited objectives. This policy would use greater exchange flexibility in an attempt to moderate difficulties which have arisen since 1945 under the system of a fixed par value with limited spreads in spot rates. These difficulties have been of three main types: (a) the arrangements have provided incentives for merchant speculation because there was little risk in a short sterling position; (b) the authorities have been forced to defend

[13] See, for example, Milton Friedman, "The Case for Flexible Exchange Rates," in *Essays in Positive Economics* (Chicago, 1953), pp. 157-203.

[14] It may be noted in passing that Canada's recent experience with a freely fluctuating currency (with no official intervention and all exchange controls abandoned) suggests that such an exchange system does not necessarily imply wide movements in spot exchange rates. For example, since Oct. 1950, the Canadian dollar has moved between (U.S.) \$0.94 and (U.S.) \$1.04, fluctuating about 5 per cent above and below the mid-point of that range; since Nov. 1952, the currency has moved only between (U.S.) \$1.00 and (U.S.) \$1.03 (as of Oct. 1, 1953). Yet Canada's favorable experience has grown out of conditions which are not likely to be found with, nor directly applicable to, European currencies. The stability of the Canadian dollar can in large measure be attributable to: (a) the strength of the current account as a result of record Canadian exports and (b) the two-way movement of capital which has continued to take place throughout the period since controls over capital flows were eliminated. A review of Canada's recent experience may be found in my article, "The Canadian Dollar: A Fluctuating Currency" in *Rev. Econ. Stat.*, Aug. 1953, XXXV, 236-43.

rates within narrow limits and have been unable to withdraw under temporary pressures; and (c) the monetary authorities have been forced to provide spot exchange and, for forward cover, to assume substantial risks as well because there was no functioning private market to take care of commercial requirements.

Within the framework of this third concept, two alternative exchange policies could be adopted. Greater exchange flexibility could be achieved by abandoning current official buying and selling rates and either (a) introducing widened fixed rates for official trading, or (b) announcing to the market that no official buying and selling rates would be in effect. With either arrangement, an added risk is introduced into the exchange market; the authorities have somewhat more freedom to let the rate slide rather than to surrender reserves; and, finally, a freely functioning private market can be set in motion, with commercial banks and brokers able to trade with each other directly at market rates within the broader spread in spot rates. These alternative policies will next be compared.

IV. *Significance of a Fixed Official Spread*

On one technical point, an exchange system with a fixed official spread, with or without a declared par value, is similar to the classical gold standard: there are announced limits to the fluctuation of the spot exchange rate. Until the par value is altered or new trading limits are established, the financial and trading communities and foreign monetary authorities are assured that, under normal conditions, exchange rate movements will be confined within the predetermined and announced limits.

The fact that exchange fluctuations will ordinarily be so confined does not mean that the spot rate will necessarily be more stable with a fixed spread than with no declared spread. Where the authorities are prepared to defend a market rate, using restrictions where required, as has recently been true for the Italian lira, a high degree of stability can be attained without any fixed official buying and selling rates. Where recourse to restrictions is avoided, the ability of the authorities to maintain a stable rate will depend—under either of the two policies—upon the degree of external balance attained and upon the volume of available reserves.

The difference between these alternative exchange arrangements—and hence the significance of a fixed official spread—appears to lie in another direction: that is, in the operational freedom which the monetary authorities can have in the exchange market. With official rates in effect, their freedom is limited by this commitment to a fixed

range of price fluctuation, a commitment wholly absent where no declared trading rates exist.[15]

This limitation has both an international and a market significance. In the international field, the system with official trading rates provides a bulwark against the development of a chain of competitive depreciation; at least, it preserves virtually all the safeguards in this direction which are to be found in the Bretton Woods Agreements.[16] Protection against competitive depreciation is less evident where the authorities are not committed to any fixed buying and selling rates. The significance of this safeguard becomes a matter of how useful the Bretton Woods obligations are held to be as a means of preventing the recurrence of a wave of international competitive depreciation.

Within the foreign exchange market, the commitment to a declared spread provides the merchant with a standard for purposes of pricing and for making economic decisions which is firmer and more reliable than is found where no official rates exist. To this extent, foreign trade is facilitated. To be sure, in the absence of official trading limits, the trader can use the forward market to cover much of the added exchange risk; but a range of business transactions and of investment decisions exists which would be interfered with by the greater risks and pricing difficulties associated with an undeclared spot range. To suggest that merchandise trade may be discouraged where no official rates prevail does no more than restate an accepted weakness of a flexible exchange mechanism.

The distinct international and market advantages associated with official buying and selling limits should not obscure the fact that the fixed spread system is essentially a compromise which attempts to avoid the worst disadvantages of either a system of narrow trading limits or of widely fluctuating exchange rates. The main difficulties with such a system arise around the question: how wide should the declared spread actually be? With too narrow a spread, the disadvantages of the earlier postwar exchange arrangements might recur; with too wide a range, the market may find little meaning in the official rate commitment. If the spread is wide enough to avoid the rigidities of narrow limits, new difficulties are likely to emerge, particularly in

[15] The monetary authorities are committed only to operate within the official trading limits; but unless they are able—through intervention in the market or through other measures—to keep the currency from remaining at the lower support level, market difficulties are likely to arise.

[16] See Article IV, Section 4 of the Fund's Articles. Since members undertake in subsection (b) to permit exchange transactions only within prescribed limits (for spot exchange, within one per cent of parity), there is somewhat greater danger that currencies may have different values in different markets where a wider official spread is in effect than would be the case with narrow official trading rates.

maintaining orderly exchange conditions in a world with trade and exchange restrictions.[17] Hence, a step towards a wider spread makes desirable parallel steps in the direction of a freer movement of goods and short-term funds to increase arbitrage possibilities. The United Kingdom made a move in this direction in mid-May 1953 when a scheme was put into effect which provided for arbitrage between the principal European exchange markets in eight important European Payments Union currencies: besides Britain, the participating countries are Belgium, Denmark, France, Western Germany, the Netherlands, Sweden and Switzerland. By making it possible for banks in these countries to trade with each other in any of these currencies, the scheme had the effect of standardizing the spread in spot rates among the eight currencies at around ¾ per cent either side of par in place of the former margins which varied from less than ¼ to a full 1 per cent.[18] While the resultant changes were largely technical in nature, the scheme "will do much to prepare the technical apparatus in various foreign exchange markets for the day when some sort of convertibility might be re-established."[19]

Since the selection of any exchange arrangement is a choice of distinct advantages inseparable from particular disadvantages, new difficulties of maintaining exchange stability are likely to be encountered under a system of a wider official spread. Consequently, the demonstrated weakness of the former system of narrow trading limits should not lead to the conclusion that a wide degree of exchange flexibility is necessarily desirable at this time. The clear disadvantages of a high degree of flexibility should be borne in mind, particularly if a period of intensely competitive selling is in prospect. Is there not some danger that the postwar experience with the rigid par-value system during a period of easy selling may lead to the widespread acceptance of too much exchange flexibility—at a time when only buyers' markets are to be found?

[17] The wider the official spread, the greater the danger that currencies will have different values in different markets. Nonetheless, these difficulties have existed under the narrow spreads previously in effect: throughout the postwar period, the market values for trading currencies have differed from exchange values based upon the official parities. To some extent, it has been possible to maintain values at legal parities by means of controls in an isolated legal exchange market, but exchange discounts have tended to emerge in illegal or nonlegal markets. The difficulties with differing market values for currencies seem to be a matter not of exchange mechanism but of imperfect market conditions; these differentials tend to develop as a result of obstacles to the movements of goods and funds which prevent arbitrage operations from evening out excessive price differences.

[18] *Financial Times* (London), May 16, 1953, p. 1.

[19] *Economist* (London), May 16, 1953, p. 461.

WHAT EVERY ECONOMIST SHOULD KNOW ABOUT HEALTH AND MEDICINE*

By Eli Ginzberg

When he established his Commission on the Health Needs of the Nation in December 1951, President Truman directed that it inquire into and study the following:

1. The current and prospective supply of medical personnel and the ability of educational institutions and other training facilities to meet prospective requirements.
2. The ability of local public health units to meet the needs of the general public during this mobilization period.
3. The problems created by the shift of thousands of workers to defense production areas.
4. The adequacy of existing and planned medical facilities to meet present and prospective needs.
5. Current research activities and the programs needed to keep pace with new developments in health.
6. The impact of public service programs—military, civil defense, veteran—on the maintenance of a desirable standard of civilian health.
7. The adequacy of private and public programs to finance medical care.
8. The extent of federal, state, and local government services in the health field, and the desirable level of expenditures in view of other financial obligations of government and the expenditures for health from private sources.

President Truman also provided that one year after the date of his Executive Order the Commission should cease to exist. A review of the work of the Commission must juxtapose these two facts: the assignment given to the Commission and the time limitations placed upon it.

It is not necessary to review here in detail why President Truman

* A review article based on *Building America's Health,* A Report to the President by the President's Commission on the Health Needs of the Nation. Vol. I—Findings and Recommendations; Vol. II—America's Health Status, Needs and Resources; Vol. III—America's Health Status, Needs and Resources—A Statistical Appendix; Vol. IV—Financing a Health Program for America; Vol. V—The People Speak—Excerpts from Regional Public Hearing on Health (Washington, 1953). The author, professor of economics at Columbia University, acknowledges his indebtedness to Dr. Herbert Klarman for his careful reading of the manuscript.

decided late in his administration to appoint a health commission and to give it so comprehensive an assignment. But the salient factors must be noted. December 1951 was but seven months before the national nominating conventions were to meet and less than a year before the elections. President Truman personally, and the Democratic Party generally, had been hoisted on a petard by the President's reiterated support in previous years of a compulsory health insurance program. By 1951 Mr. Truman recognized that such a program had failed to awaken mass support but that it had crystallized the active opposition of the medical profession to the Administration. Practical politics dictated that an effort be made to reduce this opposition and at the same time develop a constructive health program that the public would support.

I. *The Commission*

The membership of the Commission is worthy of note, for in health planning, as in other social areas, the attitudes that one brings to the task will determine the solutions which emerge. The chairman was Dr. Paul B. Magnuson, a former professor of surgery at Northwestern Medical School, who had contributed greatly to the revitalization of the medical program of the Veterans Administration at the end of World War II. There were four other physicians, a dean of a dental school, two medical educators, and one nurse—a total of nine persons who are members of the health professions, men and women of national stature. Originally, a trustee of the American Medical Association had been invited to serve but declined. The other six members were a former foundation president, two trade union leaders, a distinguished Negro educator, a prominent editor of a farm journal, and the general secretary of the National Consumers League.

There was much logic to this pattern of selecting the Commission if the aim was to secure as much agreement as possible on a constructive alternative to a compulsory health insurance program. Yet let us see who was not represented. While labor had two representatives, business had no active spokesman. When the AMA trustee withdrew, it seemed likely that the report that would be written could not gain the support of the leaders of organized medicine. There was no trained social scientist at all, and in particular, no economist on the Commission, although the eight points in the President's assignment charged the Commission with studying the desirable level of health expenditures, "taking into consideration other financial obligations of government."

How did the Commission approach the problem of coping with so comprehensive an assignment within so short a space of time? Of the eight subjects with which it was charged, it virtually ignored the third, concerning the health needs of workers in expanding defense produc-

tion areas; and it paid no attention to the eighth point in the Executive Order beyond hearing testimony to the effect that the economy was likely to continue to expand and that there would therefore be ample national resources for an expanded health program. The Commission made a valiant effort to study the other six points through a diversified program of work.

It placed substantial reliance on its study staff, under the direction of Dr. Lester Breslow, who was borrowed from the California State Department of Public Health, to compile and analyze the basic facts of the health resources of the United States. It attempted to determine "health needs" through the device of panel hearings which were held under the chairmanship of different Commission members. More than four hundred experts appeared at the twenty-three separate all-day panels, which covered the major subjects eventually incorporated in the final report. The official record of these panels runs to more than two million words.

The Commission decided that it also had to go "to the grass roots and determine how the people really felt on the big health questions of the day." Hearings were held in Philadelphia, Dallas, Raleigh, Minneapolis, St. Louis, Detroit, Cleveland, and San Francisco. The entire Commission held two-day meetings each month to review the findings of the panels held during the preceding month, and met for eleven days in October and November, when it prepared its final report. The conscientiousness with which the members approached their assignment is indicated by the fact that they devoted more than thirty days of formal meetings to the work of the Commission during the twelve months that it was in existence.

II. *Scope of the Report*

Of the five published volumes, which together comprise the report, only Volume I is the work of the members of the Commission. The remaining volumes were put together by the staff. Volume II, *America's Health Status, Needs and Resources,* covers the following ground: population trends and their bearing on the health needs of the American people; an analysis of special health problems, such as chronic illness and mental illness; the needs of particular groups, such as people in rural areas and the aged. Two long chapters are devoted to the facts and issues in the field of health personnel and facilities. In addition, there are chapters on research, group practice, and financing personal health services. Special note should be made of a long selected bibliography.

Volume III, *A Statistical Appendix,* consists of 299 pages of statistical tables without any interpretive text. It supports Volume II. Volume IV, *Financing a Health Program for America* has two parts: Part 1

contains papers presented at the panel on financing a health program and covers such items as the scale of present expenditures, prepayment plans, and the relation of our health needs to our economic resources. Part 2 contains source material on financing. Volume V, *The People Speak—Excerpts from Regional Public Hearings on Health,* presents over 500 pages of selections from the testimony of nearly 400 witnesses who appeared at the eight public hearings.

Without question Volume II is the most valuable of the staff reports. It presents the facts and figures which form the background for the Commission's findings and recommendations. The nonspecialist will find this an enlightening compendium and the specialist cannot fail to be impressed with the skill with which so much material has been organized. There is not much that is new, but most of what is there is authoritative. Since Volume III contains only statistical tables, it cannot be used with safety by the nonspecialist.

The papers on financing which form Part 1 of Volume IV provide the nonspecialist with an excellent introduction to the range of contemporary opinion about this subject, particularly concerning the elements of strength and the weaknesses of prepayment plans. The specialist cannot help but be distressed by the fact that there is hardly an idea to be found in the twenty-two presentations that has not had currency for a decade or more. It appears that the experts enter the fray with set positions and the nonprotagonists are not welcome. The source material which forms Part 2 of this volume includes a large number of interesting tables, but the explanatory materials are so condensed that all but the most sophisticated readers are in danger of being misled by "the facts."

In his introduction to Volume V, *The People Speak,* the chairman discusses these hearings and comments on the high quality and freshness of the individual presentations. The reviewer agrees with this evaluation. It is not easy to agree, however, with the chairman's judgment that "this volume is a primer on health." It is more a testimonial to the deep concern of many individuals and groups throughout the United States with the inadequacies of existing medical services, and it presents some, but not many, constructive suggestions about how such services could be effectively improved.

III. *The Commission's Findings and Recommendations*

Volume I, which is the Commission's work, contains more than a hundred recommendations that are directed to improving the health of the American people. The Commission's report is divided into eleven sections: 1 and 2 are introductory; 8 recommends the establishment of a Department of Health and Security; 10 advances the

idea of a permanent Federal Health Commission that will provide a continuing assessment of our health resources and needs; 9 deals with special aspects of health services, including specific health problems and specific population groups. The heart of the Commission report is contained in the following sections: 3, Health Personnel; 4, Health Facilities; 5, Organization of Health Services; 6, Medical Research; 7, Financing Personal Health Services; and 11, Estimated Federal Share of the Total Cost of Recommendations.

Health Personnel

The Commission was greatly impressed with the evidence of current shortages in every category of medical personnel—doctors, dentists, nurses, and paramedical workers—and of the likelihood that without a major national effort such shortages would actually increase in the future. The Commission recognized that an expansion in the amount and quality of medical services for the American people would depend in the first instance on increasing the supply of trained personnel. However, the Commission did not conclude, as had many others, that an expansion in medical services could be secured solely by increasing expenditures, but emphasized that it required prior increases in medical personnel.

The Commission actually presented estimates of the shortages that are likely to prevail in 1960 for each type of medical personnel, although it qualified these estimates by offering a wide range in the calculated shortages: For physicians the maximum shortage for 1960 was estimated at 45,000, the minimum at 22,000; for dentists, the high figure was 34,000, the low, 17,000.

These estimates, derived by calculating the ratio of medical personnel to population in the more prosperous regions of the United States and applying the norm to less prosperous regions, must result in the emergence of shortages. On this basis, there will always be a shortage. The Commission made no effort whatever to go back of the statistical norm and inquire whether the ratio of doctors to population in the more prosperous regions was proof of a surplus, balance, or deficiency in these regions. Moreover, the Commission failed to make explicit that as small an improvement as 10 per cent in the utilization of the existing supply of physicians would eliminate the minimum estimated deficit in 1960.

The calculated nurse shortage for 1960 was set in excess of 50,000. This shortage was calculated solely with reference to registered nurses, those who have completed a three-year course, without considering the very large, if uncertain, numbers of practical nurses and nurse assistants who today play an increasingly important part in the provision of nursing services. Considering the fact that the estimates of availabili-

ties, even of registered nurses, differ by as much as 50,000 from one survey to the next, the Commission's faith in the quantitative approach to the nursing shortage is indeed surprising.

The Commission found the primary cause of these shortages in health personnel to be in the financing of medical education and training. Lack of finances was held responsible for limitations on the expansion of facilities and even for the inadequate enrollment in existing facilities. It therefore recommended the use of federal funds for the support of all types of medical education, including a federal scholarship program.

The financial underpinnings of medical education are indeed weak, and the Commission was fully justified in its concern that the institutions which are responsible for producing the nation's medical manpower be strengthened. But it is questionable whether liberal use of federal funds would go more than a small part of the way to solve the problem. It is noteworthy that the only medical school dean on the Commission refused to support the recommendation to use federal funds, except for capital purposes. Among the relevant questions that the Commission failed to assess was the relation between the specific financial problems of medical education and the general financial difficulties of higher education. It also ignored or minimized such considerations as why a young woman who can earn seventy or more dollars a week as a secretary should pursue a three-year nursing course in order to earn thirteen dollars a day. Nor did the Commission sense that an increasing number of deans of medical schools would be claiming in 1953 that they were facing a shortage of promising applicants. The fact that the peak GI college enrollment is past; that state medical schools restrict out-of-state applicants; and private schools exercise selection in terms of the ethnic and social backgrounds of prospective students, suggest that the supply of "desirable" applicants may in fact be much more limited than would have been anticipated.

With regard to the Commission's first significant group of recommendations, the reviewer agrees that increases in the numbers of trained medical personnel are in the public interest as long as the quality of training is maintained. But the expenditure of $100 million of federal funds annually would probably remove only a few of the barriers which now interfere with the expansion in the supply of such personnel.

Health Facilities

The Commission takes off from the position that the need for hospital beds in many areas is much greater than the available supply, and then states that the need for replacement and modernization of obsolete

hospitals is almost as pressing as the need for construction of new units. In seeking to give quantitative expression to this need the Commission uses the standard employed by the federal government in its Hill-Burton hospital construction program—one general hospital bed for approximately every 220 people. With this standard the Commission derives a national requirement of approximately 700,000 general hospital beds and a deficit of 226,000. The nation is thus short one bed of acceptable standard for every three required.

The Commission recognized the danger of relying exclusively on this or any other yardstick in light of "the rapid changes in the incidence of disease and newer concepts in care and treatment." But it apparently did not find it feasible to evaluate the formula itself. With new hospital construction costing approximately $20,000 a bed, the wisdom of a recommendation for a building program of more than $4.5 billion appears questionable.

Although there certainly are areas in the country which are short of general hospital beds and although there are many obsolete hospitals still in operation, the Commission's estimate should still be challenged in terms of the following: recent trends in occupancy rates; the inability of many communities to staff and finance hospitals even if they were built; regional traditions that reduce the use made of hospitals below the national average. Even more important are the increasingly clear signs that developments in medicine are tending to reduce the amount of general hospital care that the community requires if proper facilities exist for ambulatory patients and for patients suffering from long-term illness. Since general hospital care is the most expensive method of caring for the sick, a Commission looking to the future should have explored these emerging trends more carefully.

Big as the general hospital construction program is, the Commission came forward with a still larger program for mental institutions. Once again the Commission made use of the Hill-Burton formula, which provides for one mental hospital bed for every 200 persons, and estimated a deficit of 330,000 beds. The implications can be gauged by the fact that it would require a building program which would cost approximately $5 billion to eliminate this deficit.

Overcrowding in the mental institutions of many states is appalling. Equally bad is the fact that in many parts of the country families are forced to keep mental patients at home because there is no space whatever in the available hospitals. The Commission is surely on firm ground in criticizing the country for failing to meet even minimum standards in providing for the effective care and treatment of the mentally ill. But the recognition of this national deficiency is no warrant for recommending a building program of astronomical proportions. The country should first attend to the pressing need of providing

proper food and attendants for those patients currently hospitalized. Moreover, the Commission itself recognizes that an effective attack upon this major health problem can come only through new approaches. To concentrate so many resources on a vastly expanded building program would be a serious error.

It is very difficult to understand the figure of $77 million for hospital construction which is contained in the Commission's "Estimated Federal Share of Total Cost of Recommendations" (Section 11). Even allowing for sizable contributions from state and local governmental sources as well as from voluntary groups, the gap between estimated requirements and the federal contribution is stupendous, for the estimated cost of the general and mental hospital programs alone approaches $10 billion.

Organization of Medical Services

In contrast to its temperate and restrained approach to contentious issues, the Commission begins its analysis of the organization of health services with the following: "The genius for organization, so characteristic of American Life in general, is conspicuous in the health service by its absence"; and then remarks that "the lack of organization that prevails in medical practice is the despair of the industrialist and the labor leader!" The Commission made this sweeping indictment because of such defects in the system as the isolation of small rural hospitals from the main stream of modern medicine and the lack of sensitivity of urban medical centers to the problems of everyday health and medical practices. It was also disturbed by the organizational practices which resulted in wasting the time of professional health personnel—such as young doctors waiting for patients—and which led to an underutilization of expensive equipment, such as the operation of an x-ray machine for fifteen minutes a day.

The Commission, after a short review of the different problems that face the general physician and the specialist in the practice of medicine, answers the question as to the best ways of utilizing the services of both in the following terms: "the widespread organization of group practice units seems to be a large part of the answer." The Commission goes on to state that "the group practice of medicine is a characteristically American response to the need for organization of health services—More than 600 medical groups are known to be functioning in the United States."

Although it is true, as the Commission points out, that organized medical bodies in many parts of the country have been distinctly hostile to group practice and that another deterrent to group practice has been the difficulty of financing the construction of proper facilities, the failure of group practice to grow rapidly cannot be ascribed primarily to these forces. The fact that less than 5 per cent of the medical pro-

fession in private practice are members of organized groups suggests that the barriers must be formidable and are probably to be found within the doctor himself. Many are attracted to medicine because of the challenge that it presents to the individual to use his independent judgment and skill. This does not mean that the "individualistic" doctor does not make use of colleagues, but simply that he does not want to practice medicine as a partnership.

The Commission is also impressed with the potentialities of a regional organization of health services which might enable the larger medical centers to provide professional leadership for outlying communities; further, the Commission states that regionalization could result in such economies as joint purchasing. The Commission favors further experimentation with this kind of organization and suggests that federal funds be made available for this purpose. But, for many years several foundations have supported pilot approaches to regionalization so that a critical appraisal of its elements of strength and its weaknesses, of its potentialities and limitations, should now be possible. There is little reason to recommend, as the Commission does, the expenditure of even so small a sum as $10 million for this purpose.

Medical Research

The Commission's enthusiastic support for medical research is indicated by its introduction to this subject: "Perhaps no field of human endeavor offers more in the way of possibilities for human betterment than that of medical research." The Commission is disturbed by the fact that total annual expenditures for medical research were under $200 million, an amount only .5 per cent of the nation's defense budget. It argues that medical research cannot be accelerated until more skilled investigators come into the field, and recommends that the example of American industry be followed in the field of medical research in order to recruit and hold more of the country's top brains. The Commission points out that this cannot be done on a "skimpy" financial base.

The Commission makes a plea for long-term rather than target research, and points out that it is important for research contracts to include the true overhead costs, else the already limited operating budgets of medical schools will be further strained. The Commission considers that the $6 million spent per year for research in mental illness is appallingly small, and recommends the fastest possible expansion. It also makes a plea for longitudinal studies of chronic illness and for much higher priority for administrative research aimed at improving the methods used for rendering health services to the American people.

In its estimated federal share of the total cost of its recommendations, the Commission has included $20 million as the additional amount

that the federal government should devote annually to medical research. Before evaluating this recommendation we should consider at least briefly a number of questions that the Commission tended to skirt in its review of medical research. First, there is reason to question its basic assumption that medical research holds the major key to human betterment. More and more of the advances in medicine depend upon the development of the basic sciences. As when the Commission discussed medical education, so with medical research, the focus of the Commission may be too narrow because it fails to relate the specifically medical to the broadly scientific within the orbit of the university and related institutions.

Although the weak financial base of higher education has made it difficult to establish conditions which would be attractive to able men so that they would devote their lives to research, it is at once too much —and too little—of an economic interpretation of behavior to argue, as the Commission seems to argue, that the major answer lies primarily in higher salaries and improved tenure. Considering what a man must know to be able to pursue medical research effectively, in terms of the mastery of the basic sciences as well as the clinical disciplines, it is not surprising that there is an apparent shortage of "top brains." The Commission's judgment that $6 million for research in mental illness is a paltry sum is reasonable when one considers the meagerness of our knowledge of the field. But if one considers the recommendation in light of available competent investigators and significant research proposals, he might find it exceedingly difficult to spend even that relatively small sum effectively. Since young psychiatrists can earn a very sizable income from private practice, it will not be easy to draw top brains into psychiatric research, especially within the environment of state hospitals where some of the greatest challenges lie.

Financing Personal Health Services

Important as the other sections of the Commission's report are, the nub of the report relates to the problem of financing the nation's health services. It is necessary only to recall that the Commission was established in the hope that it could find a feasible alternative to compulsory health insurance. The Commission approaches the problem of financing by stipulating that all persons should have access to comprehensive health services of high quality and by noting that at the present time a financial barrier often prevents a patient from using available health services. The Commision argues that although the traditional system of fee at the time of service is breaking down, the prepayment of physicians and hospital bills amounts to only 15 per cent of all private expenditures for medical care.

The Commission states that private prepayment plans can meet the needs of the public only if they are able to provide preventive services, diagnosis, treatment, and rehabilitation outside of the hospital as well as in; if they cover the total gainfully employed population; if they provide for services on an efficient and economical basis, and if they recognize their responsibilities to the public by including consumer representatives on the decision-making boards.

Using these criteria, the Commission found that despite their growth in the past years, the plans are still far short of meeting their social objectives, largely because many people are unable to pay the premiums. The Commission called attention specifically to families receiving public assistance; older persons now subsisting largely on Old Age and Survivors' Insurance benefits; and that group which does not receive public assistance for other necessities but requires it for health services—the "medically indigent."

The Commission stated that it had considered several proposals which would use governmental assistance to develop the prepayment plans to a point where they could meet the national need. Among these proposals were direct federal subsidy of existing prepayment plans; a federal health insurance corporation; national health insurance; and federal grants-in-aid to the states to assist them in the establishment and maintenance of state-sponsored and administered prepayment plans.

There is no indication in the report of the Commission's evaluation of the first three proposals. With regard to national health insurance the Commission recognized that this approach is "outstanding in the field of medical financing" but because of the violent controversy that has arisen, "it must receive further study and consideration as a possible solution of the problem." The majority of the Commission favored a cooperative federal-state program based upon liberal grants-in-aid to strengthen and expand local prepayment programs.

The one mechanism outlined by the Commission was that of an intrastate regional health authority which, with funds from various individual, group, and governmental sources, would make arrangements for comprehensive health services for all people in the area. According to this scheme the individual could choose his physician; but physicians would have to join groups in order to care for persons in prepayment plans. The Commission recognized that some states, possibly those with the greatest immediate need for health services, might not meet the standards which would permit their receiving federal grants-in-aid.

On this crucial recommendation of financing the Commission was divided: one member concurred in the recommendations of the majority with the proviso that "Comprehensive personal health services are developed so as to maintain free choice of health personnel, freedom of type of practice, and a system of remuneration that is mutually satis-

factory to the members of the health profession and the consuming public." More dramatic was the dissent by the two labor leaders and the Secretary of the National Consumers League who agreed with their colleagues but wanted to go further by providing by federal statute for the participation of every state. In the event that such federal action cannot be accomplished, the dissenting members are in favor of a National Health Insurance Act and a plan supported by joint employer-employee contributions and tax revenues.

The dissenters believe the Commission's analysis of the status of our nation's health is sound and they also accept the basic objective "that all persons in the country should have ready access to high quality, comprehensive personal health service." But they believe that the conclusion that follows is that each state must discharge its responsibilities to its citizens, and if unwilling, it should be forced to do so.

The Commission recommends a grant-in-aid of $750 million to cover the expansion of prepayment plans and to help in other ways to improve the quality of personal health services. This does not include the amount of money that would be taken from the Old Age and Survivors Insurance fund to cover premiums in prepayment plans for the beneficiaries of the program. Apparently the Commission had some question about the practicality of its financing proposal, since it recommended that it be instituted initially on a pilot basis. Moreover, it is questionable whether the plan could ever be put into effect if it had to meet all of the conditions set forth in the special concurrence noted above. There is likewise ground for questioning the wisdom of the Commission's proposal to have the federal government pay the premiums in prepayment plans for all persons in the Old Age and Survivors Insurance System irrespective of need. At the present time, the system is far from meeting its primary responsibility of providing a minimum level of income maintenance for all participants. It is never wise, and surely not in the case of the aged, to stress specific health services without reference to the ability of persons to meet their other essential needs.

By far the most serious question that should be raised about the Commission's proposal is its practicality. Consumer and business expenditures for health services in the United States are in excess of $10 billion annually. The Commission's plan contemplates an increase in such expenditures of approximately 15 per cent—the $750 million grant-in-aid matched by an equal amount by the states. There is no basis whatever for believing that an increase of this magnitude could possibly insure that "all persons could have access to comprehensive health services of high quality." Only if this sum were considered a first installment could the proposal be defended. In that case, it would be important to estimate the very large future costs.

There is one further point that must be made in this connection.

Considering the structure of the "medical market," an additional expenditure of $1.5 billion annually might not lead to any expansion in the quantity or quality of the medical services rendered to the American people. In fact, since there is, at the present time, no serious underutilization of existing medical resources, additional expenditures could not mean additional services at an early date. The Commission's report has been attacked as "creeping socialism." A less extreme criticism would point out that the Commission underestimated the rate of progress which has been made; that it over-estimated the shortcomings which exist; and that its specific proposals would not remedy the defects which do exist. The Commission placed entirely too much reliance on federal funds as a cure-all solution to the problem of providing optimum health services.

IV. *Some Cautionary Notes on the Commission's Philosophy*

Although the foregoing section has not attempted to cover all of the Commission's hundred or so recommendations and its still larger number of findings about America's health, it has provided considerable evidence about the Commission's approach to its assignment in terms of its selection of problems, its weighing of evidence, and its suggestions for reform. In this section we intend to make as explicit as possible the basic foundations of the Commission's philosophy and to draw attention to neglected or ignored evidence—not so much to prove that the Commission was right or wrong on particular points as to give the nonspecialist reader a greater understanding of the exceedingly complex nature of America's health structure. For the most part, the Commission's position as outlined here is taken from the Introduction to its report.

1. *Access to the means for the attainment and preservation of health is a basic human right.* There is widespread confusion about the relationships between the expansion of health services and the attainment and preservation of health. An individual's genetic potential and his ability to stay out of the way of speeding automobiles have as much or more to do with his health than the number of doctors and hospital beds available. Moreover, such mundane matters as the availability of jobs, the prevailing levels of income, cultural and personal determinants of consumption, and the housing market, are all significant factors determining the health of the American public.

2. *We set as a goal for this nation a situation in which adequate health personnel, facilities and organizations make comprehensive health services available for all.* According to the Commission, this concept "includes the positive promotion of health, the prevention of disease, the diagnosis and treatment of disease, the rehabilitation of the disabled." There is a large body of evidence which indicates that severe

overweight is one of the major health hazards of present-day America and if we are to rely solely on education of the public to reduce, the hazard is likely to be with us for a very long time indeed. A less extreme example is the public's attitude toward the forcible treatment of individuals with venereal disease and the sterilization of carriers of major degenerative diseases. There is little evidence that we have really set good health as a national goal. Although recent developments in the field of rehabilitation have indicated the startling gains that can be made by establishing an active therapeutic program for bedridden patients who have long been neglected, these developments have also provided us a distressing lesson—the exceeding difficulty of finding appropriate employment opportunities for those who have been rehabilitated. With the possible exception of the peak employment conditions which existed in 1944, the American economy has never been able to offer the number and types of jobs that the handicapped can fill. We build tuberculosis hospitals, but we do relatively little for the patient whose condition has been arrested, with the result that he becomes ill again. Medical treatment is only one phase of a successful rehabilitation program.

3. *We set as a goal a method of financing to make this care universally acceptable.* The Commission took cognizance of the fact that prepayment plans could not be expected to cover patients suffering from mental illness, tuberculosis, or other long-term illness. Since approximately half the hospital beds in the United States are occupied by patients suffering from mental illness, this single exclusion is a major one. Further, since the recent advances in medicine have given most persons a good chance of staying out of hospitals from the time they are born until they begin to undergo the decrepitude which accompanies senescence—with the possible exception of a day or two for a tonsillectomy or a week or so for an appendectomy—the exclusion of patients with long-term illness from a plan for financing health involves a major restriction. Every general hospital in the country is aware of the fact that it is being transformed from an institution concerned with the treatment of acute conditions to one primarily concerned with caring for the multiple complaints of the aged. Since the Commission granted such significant exclusions, it is difficult to understand why it maintained that a prepayment plan should cover contingencies which do not meet the elementary criteria of an insurable risk, such as home and office visits, or why it felt that such a plan should cover groups such as the indigent and the medically indigent who cannot pay the premiums. There are many limitations to the means test, but as long as poverty and near poverty exist, the test cannot be dispensed with unless the country is willing to ignore all safeguards in the use of public funds for private benefit.

4. *The same high quality of health services should be available to all people equally.* If some doctors are more skilled than others, and they are, it is difficult to see how this goal can be met. Since round-the-clock nursing costs in excess of $40 a day, it becomes a burdensome expense for a man with an income of $10,000 or even $25,000 a year, but it is difficult to see how such nursing service could be made available as part of any mass prepayment plan. A private room with a river view in one of the leading teaching hospitals in New York costs $40 a day. Once again, it is difficult to see how such accommodations could be provided under any prepayment plan. In a midwestern city, some years ago, the cost of supporting a psychiatric patient in the state institution was under $400 annually; in the veterans' hospital the cost was estimated at approximately $2,000 annually; and in the well-known private institution in that community, the cost, including individual psychotherapy, was approximately $10,000 annually.

Even if money were no object whatever, this particular goal of high quality health services for all could not be fulfilled without actually coercing people to train for the health professions; and then it would be necessary to use police power to distribute the trained medical manpower of the country in accordance with social needs. A much more reasonable goal would recognize the distinction between the necessary minimum and the optimum in the provision of health services; a virile democracy would aim to make the necessary minimum available to the maximum number of people as quickly as possible, recognizing that the certain costs of accomplishing this mission should not outweigh the possible returns.

5. *We believe it is well within the economic potential of this country to provide itself with the finest system of medical care in the world, that the American people desire this and deserve no less.* It would not be difficult to prove that, despite its many serious, in fact glaring, shortcomings, medical care in the United States is the best in the world. Certainly this is true for the urban population. The Commission undoubtedly intended to recommend that the existing serious deficiencies in the system be eliminated, and this it felt was well within our economic capabilities and was in consonance with public desire. It is difficult to take issue with the Commission about its conviction that we can afford to spend more, considerably more, than our current expenditures of 4 per cent of national income on health services. But it could also be maintained that we should spend more than the 2 per cent which we spend on education, the 1 per cent on research and development, or the 20 per cent that we spend on defense. Taken alone, the statement that we can afford more conveys little; we must also determine on what we are willing to spend less. To say that the American public "desires" the

finest system of medical care in the world is probably true. But we question the public's willingness to back up this desire by allocating adequate amounts of money, or equally important, by allocating the intellectual and social leadership required to fulfill it.

6. *We believe that it is true economy to invest in bigger and better health services, since the cost of adequate health promotion and protection is probably far less than the cost involved to the nation through its neglect of health.* An increasingly large proportion of medical resources is devoted to saving the lives of the individuals with serious congenital defects and in easing their burden throughout their lives. This may be a humanitarian approach to health but it is hardly an economic one. Further, an increasing proportion of medical resources is being devoted to prolonging the lives of individuals who are far past their productive years. More and more of our medical expenditures are contributions not toward a healthier people but to prolonging the lives of individuals who are suffering from chronic illnesses or old age. Not only is there no objection to a society's devoting resources to such an end, but there are strong religious and moral compunctions urging it to do so. But to offer an economic interpretation of such expenditures simply obscures the facts.

A Concluding Comment

The Commission received an assignment from President Truman that it could not possibly fulfill, surely not within the stipulated time. Critics might argue that sensible men should not accept appointment to a task that can not possibly be brought to a successful conclusion. But this is too severe a judgment. It is one of the strengths of our democracy that a request of the President is not lightly turned aside. It is a further strength of our democracy that we are willing to venture more than can be accomplished, both in the domestic and international realms. The members of the Commission accepted their difficult assignment and did their best to carry it out in an intelligent and constructive manner. They failed in their major charge of designing a practical and acceptable alternative to compulsory health insurance because a year was much too short a period in which to identify the strategy and to determine on a system of priorities for reform. But their efforts were not in vain. They made an important contribution by focusing attention on the major gaps which continue to exist between our health needs and our health resources. They did more, for they brought together many of the crucial bodies of data that alone can form a sound base for a constructive program. By these actions the Commission made a significant contribution to "Building America's Health."

COMMUNICATIONS

International Price Ratios and International Trade Theory

In the absence of trade, or when the obstacles to trade in the form of tariffs and costs of transport are significant, the price structure in one country would not be expected to duplicate the price structure in another. Differences in factor endowments in the various countries would normally lead to a wide difference between the ratios $\frac{{}_xP_A}{{}_xP_B}$ and $\frac{{}_yP_A}{{}_yP_B}$ (or to put this differently, between $\frac{{}_xP_A}{{}_yP_A}$ and $\frac{{}_xP_B}{{}_yP_B}$) where P_A is the price of A, P_B the price of B, and the subscripts x and y refer to the two countries X and Y. This is the familiar basis of international trade theory, and it is commonly employed to account for the composition of trade.

In theory too, when trade is unhampered and costless these differences in price ratios disappear. If such differences can still be observed after trade is opened, they are taken to reflect the existence of transport costs, tariffs, or other expenses of trade. To explain trade, then, we must first account for such differences in price structure as would exist were trade impossible; and in order to explain the observed differences in price structures once trade is open, we must look for various costs of transfer.

An explanation along these lines is generally put forward when we seek to show why, for instance, Canada sells us wood pulp, while she buys automobile parts from us. The two products differ so greatly that we may reasonably hope to explain, in terms of the different factor endowments of the two countries, why the ratio of the Canadian price of wood pulp to the U.S. price of the same product would, in the absence of trade, be much lower than the comparable ratio for automobile parts. We would have looked, until recently at any rate, for the Canadian price (in the absence of trade) to be especially low for that product which required for its production a relatively large amount of the factor which Canada possesses in relatively (to the United States) ample supply.[1] Finally such price discrepancies as are seen to exist, are supposed to reflect tariffs and other costs of transfer, and they would not be expected to exceed these transfer costs.

Within certain classes of products, however, we should have no obvious reason to expect different price ratios, despite the different factor endowments

[1] But recent work on both the theoretical and statistical basis for this view shows that it may not be correct; see for example, S. F. James and I. F. Pearce: "The Factor Price Equalisation Myth," *Rev. Econ. Stud.*, 1951-1952, XIX(2), 111-20; and Wassily Leontief, "Domestic Production and Foreign Trade: The American Capital Position Re-examined," *Proceedings Am. Phil. Soc.*, Sept. 28, 1953, XCVII, 332-49.

of the various countries. Such products—here called "corresponding products" —are so similar in their factor requirements that we may suppose that the ratio of the resource cost of any one of them to the resource cost of any other is the same in each country in which they are produced. Designating the real cost of A in country X as ${}_xC_a$, and so on, we may say that, for corresponding products $A, B, C \ldots$, $\frac{{}_xC_A}{{}_xC_B} = \frac{{}_yC_A}{{}_yC_B}$; $\frac{{}_xC_A}{{}_xC_C} = \frac{{}_yC_A}{{}_yC_C}$. Needless to say, this does not mean that ${}_xC_A = {}_yC_A$.

If then we can find corresponding products ($A, B, C \ldots$), if in addition factors receive the same pay in any country no matter whether they are producing A, B, or $C \ldots$, and if the firms of any country whether producing A, B, or $C \ldots$ set price at a uniform mark-up over cost, it would follow that the ratio $\frac{{}_xP_A}{{}_xP_B}$ would equal $\frac{{}_yP_A}{{}_yP_B}$, or in other words that $\frac{{}_xP_A}{{}_yP_A}$ would equal $\frac{{}_xP_B}{{}_yP_B}$; $\frac{{}_xP_A}{{}_xP_C}$ would equal $\frac{{}_yP_A}{{}_yP_C}$; and so on. And if these ratios are found to be unequal when a class of corresponding products is examined, it follows either that factors are not paid the same in any one country when producing A, B, and C, and the differences are not matched in the other country; or that mark-ups on A, B, and C are not identical, and that if there are differences in mark-ups in one country the pattern of mark-ups is not the same in the other.

It seemed reasonable to choose as a class of corresponding products various books recently published in the United States and Great Britain. Fifty-six titles were selected as they were found in advertisements and reviews appearing in recent issues of the *American Economic Review*, the *Economic Journal*, the *Times Literary Supplement*, and the *Saturday Review of Literature*. List prices for both the British and the American edition were recorded. Comparing prices for each title we computed the number of shillings to the dollar implicit in such a price comparison. Thus a recently published title sells for $6.00 in this country, and 25 shillings in Britain; the number of shillings to the dollar as implied by this comparison comes to 4.17.

Now these books are corresponding products, and if the printer at work on title A does not draw more pay than the printer on B, the pattern of money costs for the various titles would be the same in both countries. If at the same time the pattern of mark-ups is the same in both countries, then a calculation prepared for each title like that above should give the same result in terms of the number of shillings to the dollar, since this means no more than that the price ratios are the same.

However, when this was done it was found that instead of a clustering of the results around a central value, or two of them, they were in fact widely dispersed. The following summarizes our findings:

The Number of Shillings to the Dollar as Implied by Price Comparisons for Identical Titles

	Number of Cases
From 2.0–3.0	2
3.0–4.0	10
4.0–5.0	20
5.0–6.0	17
6.0–7.0	3
7.0 and above	4
	56

The median value was 4.61 shillings to the dollar (equivalent to £1 = \$4.34), which while it is well above the exchange rate, is nevertheless thought to give a reasonably accurate picture of the purchasing power over consumer goods of the pound in terms of the dollar. But it is the range of the variation which is most striking; it extends from 2 shillings to the dollar (equivalent to £1 = \$10.00), to 8 shillings to the dollar (equivalent to £1 = \$2.50). Two-thirds of the observations fall within the rather considerable range 3.57 shillings to 5.50 shillings to the dollar (or within the range £1 = \$3.64 to \$5.60).

These results are not presented as a great puzzle; an explanation of a sort can be provided. For one thing, it must be noted that British publishers own the primary copyright on some of these books, while American publishers own it on others. However, this fact would at best lead us to expect two different ratios, and not the scattering of values actually found. Secondly, wage rates in the printing industry are not uniform in the United States, since there is a North-South differential. But this is believed to be a factor of limited significance for the matter considered here. The most important explanation seems to be that the patterns of mark-up are quite different in the two countries. A British publisher evidently sets a rather low mark-up on one title and a higher one on another, while his American counterpart reverses the rule and establishes a higher mark-up on the former title than on the latter. Whether it is sensible to link these international differences in the patterns of mark-ups to variations in the British and American structures of demand and its elasticity can not be considered here.

In any case it does seem evident that in international trade theory an important place must be reserved for such phenomena as differences in mark-up patterns in the various countries. Moreover, bearing in mind the different price ratios that are observed, the low tariff on books, and the small costs of transfer, it appears that even so literate and presumably so well-informed a group as those who buy books is either singularly blind to its own pecuniary advantage, or alternatively it places a very high, and oddly variable premium upon its own convenience.

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Sales and Output Taxes

The application of K. E. Boulding's asset-indifference technique[1] to taxation problems is of particular importance[2] to economists interested in public policy because the results occasionally differ markedly from those obtained from the customary analysis based on the assumption that production always equals sales. The purpose of this note is to re-examine two of the tax cases Boulding takes up and then to analyze briefly a third important case. A more meaningful and realistic result is obtained in Boulding's first case when an important assumption of his is removed and his analysis extended. A serious error in reasoning is discovered in his second case.

Since Boulding's asset-indifference apparatus is perhaps not, as yet, well known, a short preliminary explanation of this technique seems in order. Its basic assumption is that firms aim at preferred holdings of goods and other assets at a point of time rather than mere profit maximization over a period of time. The initial asset position of the firm is depicted by P_0 in Figure 1. The ordinate of P_0 shows the firm's initial money stock and the abscissa the original commodity stock. $P_0R_1P_1$ is the firm's "production opportunity line" or total cost curve showing the possible combinations of money and commodity attainable by producion. P_0R_1 represents the total fixed cost and R_1P_1 the total variable cost in the present period. If the firm does not produce in this period, its money stocks will simply fall by P_0R_1 and the firm's new asset position will be R_1. The marginal cost of production, the slope of R_1 P_1, is assumed in this diagram to increase as output increases.

P_1K_1, the firm's "exchange path," shows the amount of money obtainable by selling the commodity in the market. Since a perfect market is assumed in Figure 1, total revenue increases at a constant rate. Thus the slope of P_1K_1 is constant and its absolute value equals the market price. The firm will exchange commodity for money until it has reached the highest indifference curve touching its exchange path. It is readily seen from the diagram that, to get as high up the utility surface as possible, this perfectly competitive firm will move along its production opportunity line, $P_0R_1P_1$, to that point where an exchange path is just tangential to it and then will proceed along that exchange path to K_1 where an indifference curve is tangential to it. Optimum output is then Q_1P_1, optimum sales P_1S_1, and optimum inventory accumulation S_1Q_1.

I. *A Fixed Tax on a Perfectly Competitive Firm*

Boulding concludes that a fixed tax on a perfectly competitive firm (1) will not affect production, sales or price if the marginal rate of substitution is invariant with respect to the amount of money and (2) will affect sales but neither production nor price if the indifference curves are not parallel.[3] The second conclusion seems faulty[4] since it is incorrect to assume the market price

[1] K. E. Boulding, *A Reconstruction of Economics* (New York, 1950), Ch. 6.

[2] In this application Boulding uses "the asset-indifference apparatus to produce some moderately significant new results" (W. Vickrey, *Am. Econ. Rev.*, 1951, XLI, 674).

[3] *Op. cit.*, p. 104.

[4] Actually both conclusions are faulty. The first conclusion cannot hold where the

remains unchanged (even though marginal cost is unchanged at any given abscissa). It seems more likely that both price and production will be affected so that the result is even more sharply divergent from elementary marginal analysis than Boulding leads one to believe.

Thus in Figure 1, after the imposition of the fixed tax R_1R_2 the firm's production opportunity line shifts from $P_0R_1P_1$ to $P_0R_2P_2$. The new output, Q_2P_2, will equal the old output, Q_1P_1, *if* the market price remains unchanged

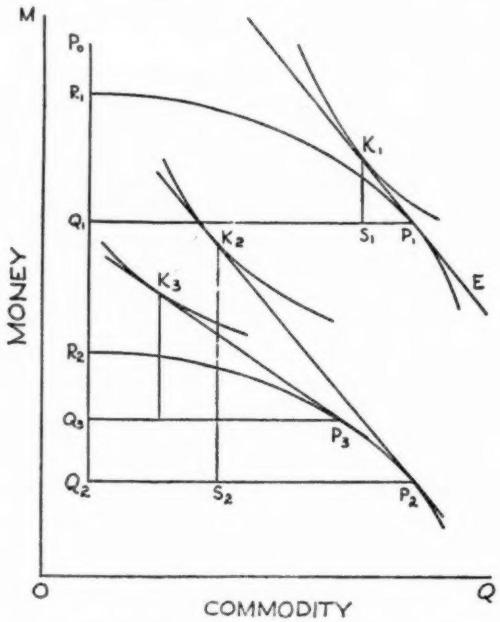

FIGURE 1. A FIXED TAX IN A PERFECT MARKET

at the negative of the slope of P_1K_1. But it is unrealistic t. assume, as Boulding does, that the market price remains unchanged unless one restricts the case drastically to the imposition of the tax on only *one* of the many firms in this perfectly competitive industry.[5] To see the effect on price, one must first derive the market supply curve. It is important to note that here the industry supply curve is no longer a mere summation of firm marginal

competitive firm's marginal cost is constant. Here production is limited by the total amount of money at the disposal of the firm. In this case, after the imposition of an industry-wide fixed tax, output will *decrease,* market price will rise in the fashion described below, and sales are likely to fall.

[5] It would be uncharitable to assume that Boulding intended to analyze this less interesting alternative. Since he compares his results with those obtained in elementary marginal analysis where fixed costs do not affect price, he must be considering the tax as being industry-wide. After all, in the elementary analysis, neither a variable nor a fixed tax on *one* firm could affect its price.

cost curves.[6] With total cost curve $P_0R_1P_1$, the sales[7] of the firm depicted in Figure 1 will fall below S_1P_1 if the price falls below K_1S_1/S_1P_1. If there are 200 identical firms in the industry, the industry supply at these two prices will be 200 times these quantities. Similarly the amounts the firm will be willing to make available at other prices can be ascertained and then also the industry supply schedule. *If* the market price remains constant at the negative of the slope of K_1P_1 (say) after the imposition of the fixed tax R_1R_2, then production will remain constant at $Q_2P_2 = Q_1P_1$; but sales will increase from P_1S_1 to P_2S_2 since the lower indifference curves are flatter and hence the point of tangency of an indifference curve with the exchange path P_2K_2 comes at a smaller abscissa—as Boulding notes. But with the new total cost curve, at *all* prices the firm will similarly throw more on the market. Thus after the imposition of the fixed tax there is a *positive shift* of the firm's supply schedule even though marginal cost remains constant at each abscissa! Thus a positive shift of the industry supply curve also follows if the tax is widely imposed[8]—and hence a fall in the equilibrium market price to the absolute value of the slope of P_3K_3 (say). At this price the firm produces Q_3P_3 rather than Q_2P_2.

Thus not only may sales increase as Boulding notes, but also market price and the firm's production may fall. These are important modifications to customary elementary analysis where the imposition of a fixed tax on the firms of a purely competitive industry is held to affect neither the firm's production (as long as it is not driven out of business) nor the market price (unless a significant number of firms are driven out of business). Here, in general, not only may sales increase but also both output and price fall significantly even when there is no exit from the industry.[9]

II. *A Sales Tax on a Monopoly*

Because of a serious error in the analysis, Boulding's solution to this case[10] predicts an incorrect output, an incorrect sales volume, and a wrong price.

Let us follow Boulding by assuming a constant marginal cost so that the

[6] One wonders whether Boulding's assumption that market price remained constant was mistakenly connected in his mind with the fact that marginal cost does not change. He says: "the marginal cost is unchanged, and the market price likewise assumed to be unchanged" (*op. cit.*, p. 104).

[7] To get as high up the utility surface as possible, the firm will move along the production opportunity line $P_0R_1P_1$ to P_1 where it is just tangential to a market exchange path, and then move along the exchange path P_1K_1 to K_1 where an indifference curve is just tangential to the exchange path.

[8] This result seems to be quite general as long as production is not restricted by money shortage and lower indifference curves are flatter.

[9] These conclusions do not hold when a shortage of financial capital prevents the attainment of optimum output. In this case, output will fall and sales may also fall (and market price rise) or sales may rise (and market price fall). Another exceptional case where these conclusions do not hold is that of constant marginal cost when the firms attain the peak of the utility surface both before and after the tax. Here output and sales would tend to rise and the price to fall.

[10] *Op. cit.*, pp. 106f. Boulding's case is that of "imperfect markets." But since he ignores any inter-firm demand relationships, it seems preferable to specify a monopoly.

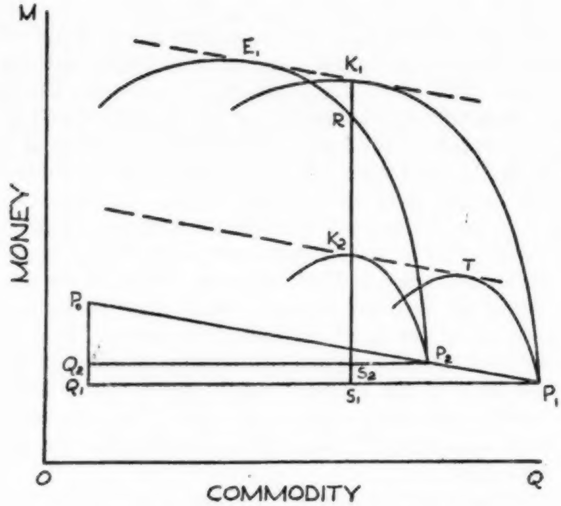

FIGURE 2. TAX PER UNIT OF MONOPOLY SALES

total cost curve, P_0P_1 in Figure 2, is a straight line. A fundamental difference between this diagram and the previous one is that the slope of the exchange path will fall as the monopoly sells more commodity (because the slope of its demand curve is negative). If this exchange path (fish-hook), P_1K_1, is moved along the production opportunity line P_0P_1, an envelope curve, K_1E_1, is generated. To get as high up the utility surface as possible, the firm will proceed along the envelope curve to that point where an indifference curve is just tangential to it. Thus with P_1K_1 as the exchange path or total revenue curve, K_1 will be a position of equilibrium if an indifference curve is just tangential to the original envelope E_1K_1 there. Production will be Q_1P_1 and sales S_1P_1.

If a constant tax per unit of sales is now imposed, P_1T is the total revenue net-of-tax curve and K_2T the envelope generated by a succession of such curves. If the indifference curves are parallel, K_2 directly under K_1 will be the equilibrium position since the envelope curves are also parallel with constant marginal cost. With K_2P_2 as the relevant total revenue net-of-tax curve which generated the point K_2 on the envelope K_2T, Q_2P_2 will be produced and S_2P_2 will be sold at a price equal to the tangent of the angle RP_2S_2 of the *total* revenue exchange path. Production thus falls the same amount as sales and price rises from K_1S_1/S_1P_1 to RS_2/S_2P_2.

Boulding errs by selecting the wrong total revenue curve as relevant for the equilibrium position K_2. Actually Boulding seems to have drawn K_2P_2 in his diagram[11] to look like the *upper* part of a before-tax total revenue curve—*i.e.*, like K_1P_1 displaced vertically downwards so that K_1P_1 and K_2P_2 are parallel at each abscissa. This erroneously implies that the first section

[11] *Op. cit.*, p. 106, Figure 48.

of the demand curve would not be operative—*e.g.*, that a firm faced with a demand schedule price = 10 − *x*, where *x* stands for output, would not sell its first unit at \$9 but at \$5 or \$4 and succeeding units at even lower prices. A more fundamental objection is that after paying the tax the firm would end up at some point *below* K_2 and thus *below* its opportunity boundary, K_2T. Thus the firm's final position in Boulding's solution is not an equilibrium one. His solution for this problem indicates too high a volume of production and sales, too low a price, and a final asset position worse than those on the net-of-tax envelope which *are* attainable by the firm.

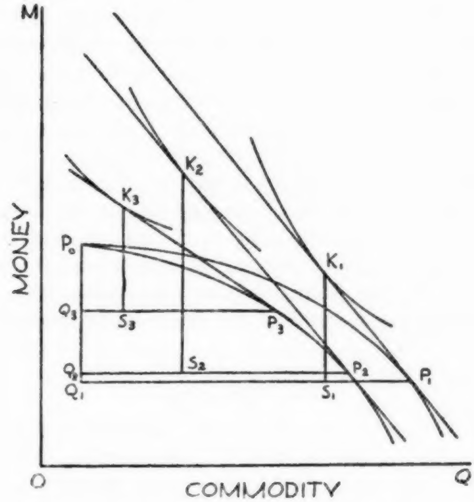

FIGURE 3. VARIABLE TAX IN A PERFECT MARKET

III. *Tax on Output of a Perfectly Competitive Firm*[12]

After the imposition of a variable tax on a single perfectly competitive firm, its production and sales will tend to fall by the same amount if the marginal rate of substitution is invariant with respect to money holdings.[13] Thus the investment in inventory will remain constant. But if lower indifference curves are flatter, then it is quite possible that sales will rise even though output falls. Here the diminution of the money stock because of the tax increases liquidity preference and hence the desire to sell. Thus in Figure 3 P_0P_1 and P_0P_2 are the total cost curves before and after tax. After the tax, output falls from Q_1P_1 to Q_2P_2 but, at the constant price equal to the negative

[12] Boulding discusses this case only by implication in his analysis of the "demand for input" where he again fails to take account of possible effects on market price.

[13] And providing also that an equilibrium position can be attained in this second period, *i.e.*, that an indifference curve is tangential to the relevant exchange path at some abscissa to the left of that of optimum output. If the point where an indifference curve is tangential to the relevant exchange path lies beyond the optimum output for this period, sales will decline to zero (in this period).

of the slope of the exchange path K_1P_1, sales rise from S_1P_1 to S_2P_2. Sales could, of course, also remain constant or fall as a result of the imposition of the tax. But output will decline except in unusual cases.[14]

When the variable tax is industry-wide, the same analysis applies except that the effect on market price must be considered. With parallel indifference curves, both output and sales will tend to fall. In addition market price will tend to rise because of the negative shift of the firm and hence industry supply schedules. (With the new total cost curve, the volume of the firm's sales at each price will tend to be smaller and hence also the industry supply to the market.) With the higher price, the investment in inventory will also tend to fall. But with flatter indifference curves at lower money holdings, the firm's sales may increase even though production falls (as outlined above) and hence the industry's supply schedule may shift to the right and a *lower* market price prevail after the tax. Thus in Figure 3 the firm will be faced finally with exchange path P_3K_3, produce Q_3P_3 and sell S_3P_3. If the tax is very steep and the slope of the lower indifference curves doesn't fall greatly, however, sales are likely to fall and hence the industry supply schedule to shift negatively and market price to rise. In either case inventory investment is likely to fall.

Thus the result may differ markedly from that obtained from elementary marginal analysis where invariably output and sales (which are identical) fall and market price rises. Here while output usually falls, sales may well increase and price fall as a result of the tax if lower indifference curves are flatter.

IV. *Conclusions*

If a fixed tax is imposed on a perfectly competitive industry where the firm's indifference curves are parallel, (1) production, sales and price will remain constant as long as no financial shortage prevents the attainment of optimum output and (2) output will fall, market price will rise, and sales will likely fall, if production is limited by a money shortage. Where lower indifference curves are flatter output generally will fall[15] as a result of the tax and (1) sales rise and price falls if no money shortage limits production and (2) if output is limited by financial shortage, sales may either rise or fall and price either fall or rise.[16]

If a tax is imposed on each unit of product sold by a monopoly faced with constant marginal cost, sales and output will decline by the same amount and price will rise. But sales and output will not fall as much as Boulding indicates and the price rises more than in Boulding's solution.

If a variable tax is levied on the output of a perfectly competitive industry, both output and sales fall and market price rises if the marginal rate of substitution of money for commodity is invariant with respect to money holdings. If the indifference curves become flatter at lower money holdings,

[14] One exception would be where marginal cost is constant and the firm is able to attain the peak of the utility hill both before and after the tax.

[15] For an exception see the second case in n. 9.

[16] Only in very unusual circumstances here would the industry supply curve remain constant and hence the market price and the firm's sales remain unaffected by the imposition of fixed tax.

sales may well rise even though output falls and market price may well fall. This last result differs markedly from that obtained from elementary marginal analysis.[17]

VERNON W. MALACH*

[17] With reference to Professor Boulding's one point of dissent in the following "Rejoinder," I would not question the practical importance of a tax laid on one or a few firms in a competitive industry. I ignored this case since it was clear from Boulding's original discussion that he was *not* discussing it.

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Comment

I am grateful to Mr. Malach for pointing out these errors, which I am glad to have corrected. I have only one point of dissent. The case of the tax laid on *one firm* or on a few firms in a competitive industry is by no means as trivial as he seems to think. All local taxation tends to be of this nature—*i.e.*, the tax does not affect the long-run price of the product because there are plenty of firms outside the local area which are not affected. Even national taxation where the product is produced for a world market may be regarded as a "local" tax in the sense that in so far as it is not universal the world price will not be affected. There are interesting problems when the tax covers a large part but not the whole of the market: here the effect would seem to depend on the elasticity of supply in the nontaxed area. If supply is very elastic even taxes which cover a large part of the total industry will not affect the market price, as the untaxed part will expand to take care of any decline in sales in the taxed part. Mr. Malach's conclusions however impress me as being correct when the tax is universal.

K. E. BOULDING*

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A Note on the Balanced Budget Multiplier

A section of Ralph Turvey's recent article[1] was devoted to the income effects of various kinds of budget changes. In it he discusses the case when "the multiplier of a balanced budget change is unity," a situation first brought to the notice of economists by H. C. Wallich[2] and T. Haavelmo.[3]

It is the purpose of this note to point out an error in Turvey's analysis. He assumes that household savings is the only leakage from the system, and shows that the result of a balanced budget multiplier of unity is independent of the marginal propensity to consume. It can be shown, however, in addition that in his model the result is independent of the marginal rate of indirect taxation, and, thus, that there may be more than one leakage in the system.

[1] R. Turvey, "Some Notes on Multiplier Theory," *Am. Econ. Rev.*, June 1953, XLIII, 282-86.

[2] H. C. Wallich, "Income Generating Effects of a Balanced Budget," *Quart. Jour. Econ.*, Nov. 1944, LIX, 78-91.

[3] T. Haavelmo, "Multiplier Effects of a Balanced Budget," *Econometrica*, Oct. 1945, XIII, 311-18.

We shall use Turvey's symbols. Consider a change in government expenditure on currently produced goods and services matched by an equal change in income taxes. The inflationary coefficient of the former is $1 - j$: the deflationary coefficient of the latter is $- h\ (1 - k)\ (1 - j)$. The change in national income will be

$$\frac{(1 - j)\ [1 - h\ (1 - k)]}{1 - b\ (1 - t)\ h\ (1 - k)} \cdot \partial G$$

where ∂G is the change in government expenditure, equal to ∂T, the change in income tax revenues.

If $j = 0$, $b = 1$, and $t = 0$, that is, if the marginal rates of income tax, imports, and business savings are zero, the change in government expenditure will equal the change in national income. It is not necessary for the marginal rate of indirect taxation to be zero.

This may be seen in another way as follows: Turvey's equation (1) is written,

$$Y = I + E + G + C + L - K - M.$$

For a balanced budget change we have

$$\partial Y = \partial G + \partial C - \partial K + \partial L - \partial M.$$

But Turvey's equation (5) is $K - L = kC$.
Therefore, $\partial(L - K) = \partial L - \partial K = - k\partial C$.

If $j = 0$, $\partial M = 0$.

$$\text{Thus, } \partial Y = \partial G + (1 - k)\ \partial C,$$

and all models which involve $\partial C = 0$ will make national income variations of the above kind independent of k. Indeed, this conclusion holds if $K - L$ is any function of C, and only of C.

M. H. Peston*

* The author, who is a research assistant at Princeton University, did the research for this note under Office of Naval Research Contract N6onr-27009 at Princeton University. He has conveyed his criticism to Mr. Turvey, who accepts it.

Errata

In the review of *Economics in the Public Service*, by Edwin G. Nourse, which appeared in the December 1953 number of this *Review* (pp. 953-57), a subtitle "The Intimate Story of the First Six Years of the Employment Act" was incorrectly appended to the title. The subtitle should have been "Administrative Aspects of the Employment Act."

In the report *Graduate Education in Economics*, published as a supplement to the *Review* in September 1953, the number of master's degrees in economics conferred by Catholic University was inadvertently omitted from the table on page 211. Catholic University conferred 18 master's degrees in economics during the year 1950-51.

MEMORIAL

O. M. W. Sprague

1873-1953

Oliver Mitchell Wentworth Sprague was an outstanding economist in the generation that has all but rendered its service and has passed on. His area of special competence was that of finance; and his life-span encompassed a revolution in that field. His training took place when the problem of bimetallism was dominating men's minds; he witnessed, and participated in the evolution of central banking, and in the scientific study of cyclical movements of business; and, before his death, he saw the advent of fiscal policy as the uppermost focus of attention in his subject. A full-scale biography of Professor Sprague would be a reflection of a rapidly changing discipline.

Professor Sprague was born in Somerville, Massachusetts, on April 22, 1873, to William Wallace and Miriam (Wentworth) Sprague. He prepared for college at St. Johnsbury Academy, in Vermont, and graduated from Harvard *summa cum laude* in 1894, being also elected a member of Phi Beta Kappa. He took graduate work at Harvard, and received the Ph.D. degree in 1897. Oddly enough in view of his subsequent career, he took his degree in political science, and the subject of his dissertation was "The English Woolen Industry in the Seventeenth and Eighteenth Centuries." The thesis was prepared under Professor William Ashley, the eminent English economic historian, then teaching at Harvard.

After a year of study in England, Professor Sprague returned to teach in economics at Harvard and, except for a three-year period at the Imperial University of Tokyo (1905-1908), he remained attached to Harvard until his retirement in 1941. He joined the faculty of the new Graduate School of Business Administration in 1908 as assistant professor of banking and finance, and from 1913 until 1941 occupied the Edmund Cogswell Converse chair as professor in those subjects, the first endowed chair at the School. From 1909 through 1920, he served on the editorial board of the *Quarterly Journal of Economics*.

Professor Sprague's first literary effort was in the role of editor. In 1903-04 he prepared for publication a volume of *Economic Essays* by Charles F. Dunbar, the real founder of the teaching of economics at Harvard, with whom he had worked until Professor Dunbar's death in 1900. Professor Sprague took over also responsibility for the second and subsequent editions of Dunbar's *Chapters on the Theory and History of Banking*, one of the classics in our banking literature, to which he added chapters of his own composition in the fourth and fifth editions of 1922 and 1929, respectively.

The first wholly creative work of his own reflected the combination of interest in economic history and banking reform which he had imbibed from his older colleague. It was a *History of Crises under the National Banking System*, one of the notable monographs prepared for and published by the National Monetary Commission, and the one that has most fully retained its

value to the present day. This was followed a year later, 1911, by a volume on *Banking Reform in the United States* and by a spate of articles concerned with the same problem.

Throughout his life, Professor Sprague had to contend with the handicap of defective vision; but this handicap became in reality a source of strength. The very difficulty of reading compelled his own thoughtful analysis of problems, which in turn manifested itself in his writings and even made his day-to-day lectures models of presentation. Thus it ensued easily that he became a popular teacher at a time when preparation for a career in finance attracted a high percentage of the students at the Business School. These two factors, however, checked the flow of books from his pen, his only volume beyond those already mentioned being one on *Recovery and Common Sense,* published in 1934. His forte became periodical articles, and the rendering of counsel in high places. Scientific articles were numerous, of which those on the Federal Reserve System in the *Quarterly Journal of Economics* in August, 1916, and the *American Economic Review* for March 1921, and the paper on wartime finance presented at the December 1916 meeting of the American Economic Association, may be nominated as especially important.

His eminence in the area of his chosen specialization was signalized in his selection by the Bank of England in 1930 as its chief economic advisor. No American has—before or since—achieved a corresponding status within the economic officialdom of that traditionally provincial country. Professor Sprague served the Bank for three years. At other times he was consultant to the Reichsbank, the Bank of France, and the League of Nations. For a few months in 1933, he held the post of financial and executive assistant to the Secretary of Treasury in the American government.

Honors were conferred upon Professor Sprague: membership in the American Academy of Arts and Sciences, and in the American Philosophical Society; the Leatherbee lectureship at the Harvard Business School; the honorary degree of Litt. D. from Columbia University; and the presidency of the American Economic Association (1937).

Professor Sprague had, in 1905, married Fanny Knights Ide of St. Johnsbury, Vermont. They had two children, Katherine Ida and Theodore Wentworth Sprague. Unhappily, Professor Sprague's retirement in 1941 was followed soon—August 1942—by the death of his wife. He lived thereafter with his daughter until his own death on May 24, 1953.

Professor Sprague was beloved and admired throughout his long, active career as a kindly and wise teacher. He was an able and creative thinker, and a persuasive lecturer and speaker; yet the qualities for which he was revered by students, colleagues, and associates alike were his wisdom and the courtesy, almost modesty, with which that wisdom was imparted. In lowly places and in high, the world is permanently enriched by the counsel which, imbedded in institutions or coursing now in men's minds, has changed the direction of our economic development.

ARTHUR H. COLE
ROBERT L. MASSON
JOHN H. WILLIAMS

BOOK REVIEWS

Economic Theory; General Economics

Economic Stability in a Changing World: Essays in Economic Theory and Policy. By JOHN H. WILLIAMS. (New York: Oxford University Press. 1953. Pp. vii, 284. $5.00.)

In this volume, Professor Williams has collected his more recent essays on the relation of economic theory to policy and on the problems of the Marshall Plan, and he has added to them his two appraisals of the two Keynes: The review of *A Treatise on Money* which appeared originally in 1931 has lost nothing in interest and may have gained by the lapse of time by enabling us to see our own depression, as it were, in a perspective not open to Williams at the time he wrote the review. "An Appraisal of Keynesian Economics," which appeared in 1948, is the kind of criticism which one finds too rarely. It too seems, to this reviewer, to have improved with aging.

Williams has always been concerned with "the relation of economic theory to public policy" with the emphasis being, however, on both theory and policy, and particularly "with the limitations of traditional theory as a guide to policy" (p. v). In this respect, the *General Theory* was as "classical" as the neoclassics, being an equilibrium system not concerned with the dynamics with which economic theory had started. "Beyond question [Keynes' contribution] was very great . . . what he has given us, in particular, is a much stronger sense than we had before of the need of consumption analysis" (p. 63). Nevertheless, there are overstatements, overgeneralizations, and in a way, as Williams points out, the theory bears an odd resemblance in structure to the equally aggregative formulation of the quantity theory of money.

To Williams all this is, however, not really relevant. ". . . the important question to ask, I think, is not how much his theory differs in its formal logic from classical economics but how much it differs from business cycle theory, the relation of which to classical equilibrium theory had been becoming increasingly tenuous for at least half a century . . ." (p. 51). Although secular changes in consumption functions have for a long time been part of the Keynesian analysis, they have not really been thoroughly discussed. "No application of the growth of investment and a multiplier to the consumption existing at the beginning of Kuznets' period, on the assumption of passivity . . . could ever account for the income-consumption relation at the end . . ." (p. 54). The failure to account for this growth is the real criticism of Keynes which he shares with the classical economists. The only criticism of Williams' which I found difficult to accept as necessary is "that the stagnation thesis constitutes the essential content of the theory" (p. 47). If a theory of the secular shift of the consumption function were developed and integrated into the system, this conclusion need not be drawn.

I have, in this review, emphasized the Keynesian appraisal not because it finds me convinced (which it does) but because it brings out the flavor and

the peculiar wisdom of Williams' contributions. Obviously, classical economists cannot take pride in his critiques of Keynes, for they are subject to the same strictures. If I were to overstate Williams' case it would be: that economists in general have not analyzed sufficiently the really important problems of constant change, and have emphasized too much equilibrium aspects. In addition, the real world which is to be analyzed has a complexity which is greater than either the existing theoretical schemata, or the merely factual or historical approach can handle.

The Marshall Plan papers which originally appeared in *Foreign Affairs,* bring out Williams' wonderful sense of reality. It is an enviable achievement to write for the "intelligent layman" and place the "expert" in one's debt at the same time. It is a great achievement that these articles, written over a number of years, form a consistent whole and that they are not out of date in any way. They can be read as an *ex-ante* appraisal of problems and likely courses of events, which have consistently proved to be correct. They can be read as proposals of policies which were followed or which, one wishes, should have been adopted. They can be read as economic history. But they can be read also as a theoretical analysis of complicated market patterns, under dynamic assumptions, and as such they are likely to maintain their interest for the economist long after the Marshall Plan has become ancient and forgotten history.

In short, these essays are timely in subject matter, and timeless in treatment; and Williams has placed the profession in his debt by collecting them.

WOLFGANG F. STOLPER

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Economic Essays. By R. F. HARROD. (New York: Harcourt, Brace. 1953. Pp. xiii, 301. $4.50.)

The fifteen pieces in this varied and provocative collection range in time from the pre-Robinson-Chamberlin "Notes on Supply" and "The Law of Decreasing Costs," and the very noticeably pre-Keynesian "The Expansion of Credit in an Advancing Community," to the current (and rather counter-revolutionary) "Theory of Imperfect Competition Revised" and the equally new "Supplement on Dynamic Theory." They range in subject and approach from a challenging application of economists' tools to social issues ("The Population Problem" and "Equal Pay for Men and Women," reprints of submissions to Royal Commissions), through eight highly technical and theoretical essays on "Competition" (of which the last three are new) and four on employment (including the well-known "Keynes and Traditional Theory" and the modern classic on growth models, "An Essay in Dynamic Theory"), to a final, brief philosophical polemic, "Professor F. A. von Hayek on Individualism."

The common thread of authorship gives to the collection a subtle yet pervasive ideological unity. The underlying motif is manifested in part in Harrod's proposal for subsidizing parenthood, which would "bring about with conscious intent and by deliberate planning the kind of fundamental social

adjustment that has probably hitherto in human history been brought about by a selective process" (p. 8). But in matters of population, as elsewhere, Harrod remains true to Smithian economics: "It is wrong to put too much strain on the altruistic elements in human nature; society should be so arranged that self-regarding motives play some part in getting fulfilment of the two basic tasks of doing an honest job of work for society and providing for the next generation" (p. 12). Harrod is one with Hayek in wishing "to release the individual from despotic power or unduly cramping laws on customs" (p. 298). But he differs pointedly with him by insisting that the radical rationalist may share this wish and that the state may act to enlarge the area of individual freedom.

Harrod is suspicious of egalitarianism. He stresses the difficulties, both definitional and economic, of "equal pay for men and women." He warns against equal parenthood subsidies for the wealthy and poor, sees "no reasonable doubt that valuable qualities are hereditary" (p. 22) and would encourage reproduction by the financially successful, who give evidence of valuable qualities by their success. After revising the theory of monopolistic competition he is able in his "Theory of Profit," to "deduce that monopoly profit is . . . but one part of the global reward in the economy for uncertainty bearing" (p. 203). But he does not revise a pre-Keynesian (1934) analysis in which "when the productivity per unit of a factor, such as labour, does not increase at so great a rate as prices are falling . . . unless a downward revision of monetary rates of reward can be secured, it becomes impossible for the factor to obtain full employment and the regular economic advance of the community is impeded" (p. 223). The reader may be struck by this juxtaposition of arguments which, whatever their independent origins, justify monopoly profits but find wages too high. Keynesian economics, to which Harrod has contributed so much, might well question the judgment on wages.

Withal, in his path-making "An Essay in Dynamic Theory," Harrod offers a model pointing to the instability and tendency to economic depression which have been the main targets of radical political criticism. While showing little sympathy for "centralist planning," as in his essay on Hayek, Harrod notes, in the context of growth, that the usual simple "Keynesian" remedy of public works to take up the slack of private investment will not meet the "chronic problem" and "only by keeping in being a large and *growing* volume of public works can the slump be prevented" (p. 275, italics added).

The major new material offered by Harrod in this collection is in the areas of imperfect competition and the economics of growth. In regard to the justification Harrod submits for his new approach to imperfect competition this reviewer must express a serious methodological concern. For Harrod argues that findings from interviews of businessmen by Oxford economists have revealed that not only the old assumptions of perfect competition but also the new assumptions of imperfect competition "were still deplorably far removed from the reality." This "suggested that the assumptions of imperfect competition were in drastic need of revision" (p. ix). But why, one may ask, should the reality of assumptions, as opposed to the accuracy or usefulness

of findings or explanations based on these assumptions, be of concern to the economic theorist?

Harrod's "Theory of Imperfect Competition Revised" would shield us from the troublesome vision of a world of monopolistic and imperfect competitors victimizing society with excess capacity, operations at higher than minimum average cost, "monopoly profits," and maldistribution of resources. To excoriate these monsters Harrod pushes to the fore "free competition," which combines the downward sloping short-run demand curves of the monopolistic and imperfect competitors with "free entry." The superstructure built around "free entry" and "free competition" is ingenious and justice can hardly be done it in this brief review. In essence, however, where free entry exists (and, it is pointed out, even in an industry of only a few giants there is always the possibility that a giant in a related field will put out a new, competitive product), *potential* competition makes the really relevant, long-run demand curve relatively horizontal. It thus restrains businessmen from limiting production to the output determined by the intersection of short-run marginal revenue and marginal cost, charging higher prices than determined by "full-cost" pricing principles, or arrogating to themselves abnormally large profits.

By his assumption of "free entry" (which seems plausible enough if by free entry we mean the absence of absolute bars against potential competitors), Harrod has brought us back into a world not so strikingly different from the nirvana of perfect competition. But the "free entry" which Harrod requires to get his essentially horizontal long-run demand curve must be a much more rigorous assumption than may be readily apparent. What it must mean is that a firm must know that its receipt of one dollar more than normal profit is certain to bring in a new competitor who will erase that surplus and more. But is it likely that a potential competitor, faced by uncertainty as to whether it will in fact make a surplus profit or suffer a loss in a new market, will make the plunge for that extra dollar—knowing full well, we may add, that invasion of this new market is likely to bring retaliation from its incumbents? It would appear that in a world of risk and uncertainty, which Harrod introduces explicitly elsewhere in this discussion, a firm would be quite rational in undertaking a substantial curtailment of output and amassment of monopoly profit without fearing new competition.

However, if this last proposition is acceptable we may extend the argument. For when it is conceded that one firm might amass some monopoly profits in spite of potential competition it should follow analogously that the potential competitors themselves may be enjoying such monopoly profits. Hence it would require a differential, after proper discounting for risk and uncertainty, not merely above "normal profit" but above the surplus rate at which it is earning already for a potential competitor to feel warranted in investing in a new area. It would thus appear that there is a considerable range between the level of "normal profit," in the sense of profit that would just warrant a firm in a world of perfect competition to maintain its current investment in a product or an industry, and the amount of profit that this firm could earn (by a relative restriction of output and maintenance of higher prices) in

Harrod's world of "free entry" without having reason to fear new competition to its long-run detriment. Monopoly profit, excess capacity, operation at more than minimum cost and higher than perfectly competitive prices—all the devils that Harrod would argue away—would seem to be back with us as long as freedom of entry is restricted by the uncertainties which are part and parcel of a competitive system (and of course, in at least some degree, of any system).

The "Supplement on Dynamic Theory" offers some notable modifications of the fascinating model of unstable growth which has seemed so useful to many students of employment and cycle theory in recent years. In particular Harrod admits the validity of an objection by Alexander (*Economic Journal,* December, 1950) that the internal consistency of his "warranted rate of growth" depends upon an implicit assumption that entrepreneurs, when satisfied that their past investment was justified, will on balance *increase* production at the same rate as it had *increased* in the past period. This assumption Harrod concedes to be "unsafe" (and I may add that at least tentative findings of several participants in the "Expectations and Business Cycles" research project under Franco Modigliani would confirm Harrod in this concession). He now frames a variant assumption that satisfied entrepreneurs merely continue their previous rate of production rather than their previous rate of increase of production. He concludes, however, that his basic system is unimpaired by Alexander's criticism and his concession.

This is not the place to enter into an extended discussion of this issue. However, it should be pointed out that Harrod continues to eschew putting his system into a rigorously defined period analysis and hence makes it difficult to spell out the implications for entrepreneurial behaviour of the difference equations he presents. Were these implications brought to the full light of analysis one might be tempted to explore the consequences of various alternatives to Harrod's specific formulations. Thus, for example, if Harrod's "postulate B," that "the representative entrepreneur . . . [will] judge his stock to be neither redundant nor deficient when it consists of a certain fraction, *C,* of his intended order," (p. 284) were altered to read "judge his *investment* to be neither excessive nor deficient when it consists of a certain fraction, *C,* of the intended *increase* (or decrease) in his order," one would obtain for the warranted rate of growth (in Harrod's symbols[1]).

$$G_w = \frac{C + s - 1 \pm \sqrt{(C + s - 1)^2 - 4Cs}}{2C} .$$

This solution gives values of G_w for the unstable, smaller root (which is Harrod's concern) substantially larger than the comparable values stemming from either his original or amended formulation. (It thus points to a more severe problem, for any given saving parameter, of maintaining an *actual* rate

[1] G_w = the warranted rate of growth; s = the ratio of saving to income; C (= Cr in *Towards a Dynamic Economics*) is that marginal capital-to-output ratio at which entrepreneurs feel satisfied. The difference equation which I utilize is:

$$Y_2 = Y_1 + C(Y_1 - Y_0) - s\, Y_1.$$

of growth that would not result in explosive downturns.) Such a solution might prove relevant if firms could be assumed to concentrate on their marginal stock-to-output ratio and ignore for substantial periods inadequacies in the stock not associated directly with their current changes in output. Firms might in fact act in such a fashion to the extent that accumulated aggregate deficiencies in the stock-output ratio might reflect activities of other firms and of other areas of the economy. Harrod's "postulate B" is certainly not unreasonable but it would seem wise to examine variant specific assumptions, of which the one I suggest is only one, which might also fit a more general growth model. And further, Harrod's admitted failure to supply a general formula relating his warranted rate of growth to the variety of potential entrepreneurial responses to changes in output obscures an important area revolving around the formation and role of expectations. This area, however, is a crucial one for Harrod's growth model and for aggregative relations in the real economy.

It should be clear that this collection of essays represents the product, through the period of a generation which has seen major developments in national economies and in economic theory, of a master economist unafraid to apply the tools of his trade to basic issues of the day. Whatever the particular reactions Harrod's varied efforts may call forth, his essays are generally interesting, challenging and invaluable to those concerned with the central economic and social problems they treat.

ROBERT EISNER

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Welfare Economics and the Theory of the State. By WILLIAM J. BAUMOL. (Cambridge: Harvard University Press. 1952. Pp. v, 171. $4.25.)

A subtitle to this revised version of Baumol's doctoral thesis might well have been *The Disharmonies of Political Economy* for it is an effort to find in the divergences of social and private interests an economic rationale for intervention by the state. The discussion is largely in the context of the new welfare economics and has the effect of discrediting free competition as an economic norm by bringing into prominence familiar yet often neglected qualifications involving the rôle of external economies and diseconomies of production and consumption.

Baumol restricts the meaning of external economies and diseconomies to divergence between private and social marginal costs and benefits. He then extends this notion to embrace all cases where there is a difference in the value to an individual resulting from his actions depending upon whether or not others act in the same way. This goes well beyond the theory of the firm. The problem of military conscription versus voluntary enlistment comes under the same rubric as that of monopoly. Wherever one may fall into a "fallacy of composition," there a problem in the general theory of external economies and diseconomies can arise, because if there is a difference between the important effects of similar action taken by a large group of individuals and the important effects to the individual if he alone takes such action, there is no concordance of individual and social interest. Thus, reduced saving by an

individual during the onset of a depression may be advantageous if and only if many other individuals are willing to reduce their savings simultaneously.

This problem may be formulated more completely (although still in great generality) by considering the following three alternatives of social action (p. 141): "(1) restriction on no one's activity; (2) simultaneous restriction on the activity of every individual; and (3) simultaneous restriction on the activity of every individual but one [say individual A]."

Individual A may then find that he prefers (3) to (2) to (1), but (3) may be ruled out as politically unattainable. As a rational person, he may therefore be led to support legislation forcing him to alter his own actions. Examples would include the tax (draft) dodger who favors taxes (conscription), the traffic violator who favors traffic laws, and the monopolist who favors vigorous antitrust policy. Of course, an individual might also prefer (3) to (1) to (2) for it need not be true that if everyone behaves antisocially (at least with respect to a certain class of actions) *everyone* will be worse off than if each were to behave altruistically. In the community of nations, for example, an individual nation may gain by tariff warfare even if other nations fight back. But it will then be true, of course, that every country could do still better by ending the warfare and introducing an appropriate scheme of international indemnities. It is along the lines of these considerations that Baumol finds an economic rationale for the intervention of the state.

Baumol does not contend that the existence of an economic rationale for state intervention implies that the state *should* intervene. His book is not concerned with the ultimate question of what society *ought* to do, and his own personal policy predilections will not be evident to the careful reader. His purpose is simply to explore the implications of certain ethical judgments and these are kept to a minimum, the Pareto welfare principle being the strongest ethical proposition that is employed. This, however, leads to certain problems. The Pareto principle coupled with external economies and diseconomies leads Baumol to challenge (in this context) competition as a norm and to bolster this challenge with the implication that competition is likely to deviate *significantly* from an economic optimum. Baumol, moreover, displays a recurrent interest in the *relative importance* of various kinds of deviations from ideal output. Here such phrases as "great hardship" and "extreme deviations" creep in. But these notions typically require some basis for interpersonal utility comparisons (or the acceptance of some cardinal welfare function) and may even require a cardinal utility for the individual—devices that are excluded from the new welfare economics. On what basis, then, can it be claimed (illustratively) that expenditure on advertising involves a more "significant deviation" from ideal output than the misallocation of the labor force? Call these deviations A and B. If one person is better off under A than B and another is better off under B than A, what basis is there for regarding deviation A as being worse than B? And suppose that under A everyone is worse off than under B. How is the "significance" of the difference in welfare under A and B to be measured without a cardinal measure of utility? These are the same stumbling blocks that make it difficult if not impossible to appraise the

usefulness of the competitive model as an approximation to an economic optimum in the presence of external economies and diseconomies. Baumol is, moreover, inclined to regard the "misdirection" of resources as a less serious evil than the "wasting" of resources (p. 81). I find myself quite unsatisfied by the distinction between "misdirection" and "waste" and in no event see any a priori basis for such a judgment. Even if the conceptual difficulties underlying statements about the significance of various departures from ideal output and about the uselessness of competition as an "approximative" norm could be overcome, it would still be difficult to know how objectively ascertainable Baumol's evaluations are. These would then be essentially empirical questions and could not be settled at the theoretical level. It cannot be very satisfying to progress from observing the *variety* of ways in which the economy may depart from ideal output to the presumption of the *ubiquity* of such departures, and thence to a conclusion as to the *importance* of these departures. Since Baumol avowedly seeks "to answer such questions only to the extent that this is possible short of specific institutional investigation" (p. 12), it is doubtful that his surmises could be made binding on the rest of us.

One of the most suggestive parts of Baumol's book is concerned with the "stability" (persistence) of social arrangements where the interest of the individual diverges from that of the collectivity. Baumol considers forces operating for and against organization and law. Not only do individuals collectively have incentives to establish rules restricting their own free range of action but they also have incentives individually to violate these rules once established. These considerations relate essentially to the stability of solutions to strategical problems and might best be discussed in connection with the theory of strategical games. Surely they are important analytical problems deserving our attention.

It is pleasant reading a book that sets out to use the notions of welfare economics and not to destroy them, but many will regard it as inevitable that the final chapter which is entitled "Epilogue: The Wreck of Welfare Economics?" does not hold out very high hopes for future contributions.

Baumol's expository gift which has become familiar to us shines through his pages once again. The analytical techniques are entirely geometrical except for a couple of appendices; and material on the community indifference curve has been carried over through the courtesy of the *Review of Economic Studies*. The book is to be recommended for general reading by economists and, if I may do the publishers one better, appears to me to be quite suitable for textbook purposes. If it should become popular for this purpose it would be helpful if it didn't cost the student quite so much every time he turned a leaf.

ROBERT H. STROTZ

Northwestern University

Politics, Economics and Welfare. By ROBERT A. DAHL and CHARLES E. LINDBLOM. (New York: Harper & Bros. 1953. Pp. xxvi, 557. $5.00.)

Important advances in the development of science are sometimes accomplished by cross fertilization between two different fields of knowledge, such

as chemistry and biology. The present work, the fruit of collaboration between a political scientist (Dahl) and an economist (Lindblom), may well prove to be a case of this kind. Its purpose is perhaps best stated in the authors' own words: "We are here undertaking a political economy of welfare, related in aim to the economics of welfare but attempting an integration of economics and political science in the statement of the politico-economic conditions of welfare. We also hope to accomplish some fruitful integration of economic and political theory in the theoretical apparatus employed to arrive at these conditions" (p. 20). However, the book is more concerned with the broad types of control by which economic welfare is to be achieved than with either its actual content or specific measures for promoting it. It is strikingly different from the narrow, putatively scientific welfare economics of the school that is now so prevalent. It is rather broadly humanistic—as it should be.

Accepting as desirable the obvious trend toward more planning and control of economic activity, the authors first set up six goals, intuitively chosen, toward which such control should be directed. These are: freedom, rationality, democracy, subjective equality (defined as preferment of the many over the few), security, and progress. From there on the bulk of the discussion is devoted to a comparison of the relative merits of various means of social action that can be used in pursuit of these ends.

A considerable part of the book is devoted to pure taxonomy. Social processes for rational calculation, control, and coordination are classified and subclassified, and conditions essential for making controls effective are stated. Processes for economizing are similarly dealt with. On the whole, this part of the study seems somewhat tiresome and overdone; but a certain amount of classificatory ground-breaking is probably necessary in a pioneering study of this kind. Of interest is the emphasis placed on such spontaneous controls as family mores, group loyalties, social approval and disapproval, which are shown to be just as tyrannical as the edicts of a dictator. It is suggested that this kind of control can be manipulated so as to direct behavior toward welfare goals without direct compulsion.

The bulk of the book is devoted to a comparison of the possibilities and limitations of four "central sociopolitical processes" for economic control. Here the authors show great ability and keen insight, and it is here that the combination of political science and economics proves its value. The four processes are: the price system, hierarchy (where leaders in authority impose their commands through subordinates on nonleaders), polyarchy (our approximation to democracy, where the leaders are controlled by the desires of nonleaders), and bargaining (where two or more groups of leaders, such as two parties in Congress, or employers and unions in industry, negotiate with each other and reconcile their differences). These categories are not mutually exclusive, and every society makes use of all of them in different degrees. A free enterprise system lays relatively more stress on the price mechanism, but there are both hierarchic and polyarchic controls in every large business organization, as well as in democratic governmental bodies; and even a hierarchic totalitarian state makes some use of prices, and must cater poly-

archically in some degree to the desires of party followers and the masses. Likewise bargaining goes on between factions within and between social organizations of every kind, including business enterprises.

Once the fact is recognized that all these four types of controls are found in business as well as in government, the widespread prejudice in favor of private industry as against governmental control is seen to be indefensible. The price system on which business decisions so largely depend has the merit of providing a calculus for measuring the opportunity costs of alternative policies; but it also has serious weaknesses—its inability to give effect to important collective wants, the ill-informed and unwise choices made by consumers, the failure of prices to register effects on third parties (*e.g.*, stream pollution), the inequality of incomes resulting from factor pricing, and other shortcomings. Likewise each of the other types of control has both merits and weaknesses. A blanket judgment cannot be rendered in favor of one as against the others. Intelligent social control must use a judicious combination of all, selecting each for its most appropriate use. In developing these ideas, the authors proceed with competence, assurance, and persuasive power; but they are evidently nonplused when they come to deal with collective bargaining in the contemporary world. Rejecting the view that the counterbalancing of one major pressure group against another will protect the common welfare, they are forced to fall back on the frail hope that the leaders of these groups can be educated to a sense of social responsibility that will moderate their demands.

Throughout the book there is an emphasis on marginalism and incrementalism, as against over-all central planning and revolutionary change. The intelligent approach, say the authors, is to make successive adjustments at the margin, always selecting among alternatives the policies that move in the direction of the goals desired. In that way the aggregate of welfare is continuously increased.

There is a fascinating final chapter, in which the authors set forth their basic philosophy of progress. The Renaissance, Liberalism, and Socialism—all are now dead as distinctive social movements; but they have bequeathed us a core of objectives on which future progress must center. These are: expanding freedom, equality, and rational social action. Their attainment will require some restrengthening of the small groups on which "the good life" so largely depends; and some conscious remolding of human personalities (through education and other means) is advocated.

There is so much in this book that a brief review cannot summarize it adequately. Suffice it to say that it is well worth reading. It may have great influence on the thinking of social scientists, and their attitudes on social policy.

RAYMOND T. BYE

University of Pennsylvania

La pensée économique en France depuis 1945. By ANDRÉ MARCHAL. Bibliothèque de la Science Économique. (Paris: Presses Universitaires de France. 1953. Pp. viii, 240. 700 fr.)

This is a book about books. Properly to estimate its quality one should have

read the books it discusses. This I have not done. My review must, therefore, be particularly concerned with its usefulness to those in my position, that is, I suspect, to the vast majority of the readers of the *Review*. This book will enable them to identify recent French studies relevant to their own particular interests. Those concerned with problems of time may be led by the discussion of the work of R. Barre (pp. 148-56) to read his *Une approche à l'étude du temps;* others concerned with the dangers and problems of "aggregation" may be led by the discussion of the characteristics of various social groups (pp. 77-84) to study the works cited of Jean Marchal, H. Aujac and A. Vincent. The problems of adjustment between such groups leads M. Aujac into a theory of inflation as the "monetary consequence" of maladjustment between social groups (pp. 113-16) and François Perroux into a discussion of "la dynamique de domination" (pp. 85-98). There is a full bibiography (pp. 191-298) which should prove invaluable in checking the adequacy of our libraries; and the frequency of interesting references to the journal *Économie Appliqué* may well lead readers to make sure that it is available to them.

The generation of economists who came to maturity in the postwar period, and whose work is here discussed, were educated in the classical tradition, "élevée dans le culte des mécanismes (théorie de l'équilibre, marginalisme . . .)." The impact of two wars and the Great Depression explains, André Marchal believes, their revulsion against classicism and the concern with institutions, " 'données' structurelles et institutionelles" (p. 187). One may register here an impression that French classicism had degenerated into dogma and lost its vigor as an "organon" in the tradition of Marshall. One may also note the impact on modern French economics of foreign innovations: Keynesianism, economics of imperfect competition, econometrics, etc. André Marchal indicates that there is much talk in France of a "crisis" in economic thought: his own feeling is that there is renaissance, vitality, and that what appears to some as crisis is more properly seen as growing pains.

In Part I the work of the economists of the classical tradition is reviewed: Rueff, Allais, Baudin, Villey. Belief in the value of the classical analysis and the political doctrine of economic freedom are associated. In Part II, much the largest part, the work of economists "de conception realiste et sociologique" is examined: Perroux, Guitton, Aujac, Jean Marchal and many others. The three important chapters are: Chapter 2, "De la logique introspective au réalisme psychologique," with its criticism of marginalism and mathematical theories of equilibrium; Chapter 3, "De l'économisme au sociologisme," with its discussion of macro-economics in relation to the "structure" of the social economy; Chapter 4, "De la statique à la dynamique," with its discussion of "time," the dynamics of domination, and the impact of technological change. Part III is short and rather unsatisfactory, perhaps because there is little to report; it is concerned with "Économistes d'observation": Piatier, the pure empiricist; Dumontier, concerned to make economic concepts "operational"; Sauvy, the diagnostician; Vincent, pioneer in the study of the national accounts and in the analysis of technical progress. All in all a useful "compte rendu."

V. W. Bladen

University of Toronto

Principles of Economics. By James Gemmell and Howard L. Balsley. (New York: D. C. Heath. 1953. Pp. xiii, 589. $4.75.)

New fashions in elementary texts come and go but the authors of this recent work prefer the more conventional approach. Like the proverbial lady's dress, the text is neither short enough to be interesting nor long enough to cover the subject. In many respects it represents a condensed version of Richard T. Ely, *Outlines of Economics,* published in 1923. However, the authors do pay their respects to the contributions of macro-economic analysis in Part II of the text which is concerned, in part, with "The National Income."

The book is designed for the single-semester elementary course in economics. Numerical illustrations rather than simple graphics are utilized throughout and "short sentences and simple diction have been employed designedly" by the authors. From the pedagogic viewpoint one may seriously question the desirability of assuming that the first-year college student is incapable of understanding elementary graphic analysis. Moreover, one may doubt the wisdom of pressing economic analysis into the mold of *Reader's Digest* journalistic style. As a reading of the text will indicate, brevity will not clarify an incomplete argument.

Part I provides the student with a brief historical survey of the American economy with particular emphasis given to the nature of a system of free enterprise. Part II concerns itself with the concept of national income and its determination, the business cycle and fiscal policy of government. Part III is labeled "The National Product" but consists of a series of chapters devoted to definitions of the factors of production, forms of business organization and methods of financing them. Included too are discussions relating to risk and insurance, monopolistic devices used by business firms and government regulation of the business community. Part IV deals with value theory (demand, supply and markets; cost and price in imperfect markets and a comparison of imperfect and pure competition). Part V describes our system of money, credit and banking and selected aspects of foreign trade. Part VI is a rather conventional treatment of functional distribution with specific chapters devoted to wages, rent, interest and profit. Part VII completes the text with an array of problems confronting the American economy. Included in this section are: income inequality and social security, labor problems, agriculture, resource use, and comparative economic systems.

The text's general organization may be judged on the basis of two criteria: chapter sequence and balanced treatment of subject matter. With respect to both of these, the text evidences serious shortcomings. Chapters relating to monopoly and government control of business, for example, should logically follow the section dealing with price determination in competitive and imperfect markets. Chapters describing our monetary and banking system would normally precede, in sequence, chapters dealing with fiscal policy.

Consideration of monetary and fiscal policy, in turn, should receive considerable attention as they relate to the material dealing with prosperity and depression. The authors of the text under review have not attempted to integrate theoretical analysis with discussions of economic policy, as suggested above.

Perhaps more serious is the lack of balance in the treatment of subject matter. Four pages, for example, are devoted to a description of hedging (pp. 248-51) while little more than a page (pp. 337-38) is used to describe the process of monetary expansion and contraction through the operation of the banking system. Three pages are devoted to the concept of demand elasticity (pp. 256-59) while no mention whatever is made of shifts in demand and supply functions. Fourteen pages are devoted, in an appendix, to elements of accounting, while the multiplier and acceleration principles are given short shrift in the space of a page and a half (pp. 102-4).

A final requisite of any textbook is accuracy. Unfortunately, a number of statements appear in the text which are either loosely drawn or contrary to established fact. The following illustrate the more obvious examples:

1. "A 'non-Communist' affidavit was required of elected union officials if the union wished to avail itself of the services of the NLRB. This provision, the subject of considerable controversy, was eliminated by an amendment to the [Taft-Hartley] Act in 1951" (p. 490). This is not the case; the Act still contains the noncommunist affidavit provision.

2. "The principle of *forward pricing* has been suggested and delineated effectively by Theodore W. Schultz. This suggestion is that price parities for all commodities be arranged for the coming year by announcing the price parities one year in advance" (pp. 516-17). Schultz emphatically divorces the concept of parity from his forward pricing proposal. The latter is designed primarily to minimize production instability rather than to stabilize farm income, as the authors suggest. Moreover, in discussing agricultural policy no mention is made of Schultz's major contribution, *i.e.*, countercyclical compensatory income payments to farmers. The arguments over flexible price supports are not mentioned either.

3. "We should keep in mind, however, that profits are often nonexistent or, where they do exist, are quite small because the prices of goods in a consumers' cooperative are kept extremely low and therefore make possible little or no profit" (p. 186). Consumers' cooperatives follow the policy of pricing at competitive market prices, rather than pricing below market levels—distributing profits in the form of patronage dividends. The low "profits" of consumers' cooperatives could easily have been explained without erroneously describing their mode of operation.

4. "The tendency in the long run under pure competition, therefore, is the same as the tendency in the long run under monopolistic conditions: All other things being equal, firms will tend to adjust to an equilibrium situation" (p. 289). So what? No attempt is made to compare the allocation of resources occurring under either of these market conditions, nor are relative prices contrasted. The existence of excess capacity under imperfect competition is not mentioned. In discussing long-run equilibrium under pure and imperfect competition the authors are satisfied merely in showing that pure profits disappear.

LESTER BLUM

Colgate University

A Guide to Keynes. By ALVIN H. HANSEN. (New York: McGraw-Hill. 1953. Pp. xiv, 237. $3.75.)

Hansen wrote this book, as he says, "to assist, and induce the student to read" Keynes' *General Theory*. The intention is laudable, and the performance seems to be very satisfactory.

A diet confined to textbooks is a little too much like one composed of vitamin pills. At some point in the training of the undergraduate, he should be required to tackle something richer, and to be exposed to original and important contributions in his field of study. The *General Theory*, because of its importance and its controversial character, has seemed to be an obvious choice to prescribe to the student, but the difficulties it poses have dissuaded many teachers from assigning it. Hansen's *Guide*, to be used as a companion volume, will reduce at least some of the objections. It is to be hoped that the prediction of the series' editor, Seymour Harris, that Professor Hansen's book "will result in the *General Theory* being read more than ever," will prove correct.

The *Guide* is not a "short-cut"; indeed, it has meaning only if it is read along with Keynes. Its own arrangement follows that of the *General Theory*, though for ease of exposition, a different arrangement (in Keynes, as well) would have been more satisfactory. It consists essentially of a commentary, summarizing the central argument of each chapter or group of them, clearing up some of the more difficult parts, and occasionally pointing out the weaknesses and deficiencies in the argument.

One cannot expect to find errors in Hansen's interpretation, for it will be generally agreed that he knows as much as any economist about the *General Theory*, and on the evidence of his criticism of Keynes' *Treatise on Money*, he could claim to have anticipated important parts of it. Thus the account is likely to be authoritative. Moreover, he writes clearly and the exposition, within the limits he has established, is successful. There are, however, a few points open to question.

The account of Keynes' rejection of the second classical postulate—the equality between the real wage and the marginal disutility of labor—is unclear. Keynes denied its validity because, if it is accepted, it implies the absence of involuntary unemployment. That a cut in the money wage would not lead to a cut in the real wage, which is a part of Hansen's argument (p. 22), is not relevant to this question. Similarly, his account of Keynes' rejection of Say's Law (p. 28) is confusing. That much investment is autonomous would be a sufficient reason, but it is an unduly restricted one. It would be enough that, as Hansen himself asserts, the sum of the marginal propensities to consume and invest (if investment expenditures are induced) is not equal to unity. In his account of the consumption function, he relates consumer expenditures to the national income (p. 73), yet on the same page he has indicated how important the depreciation allowance may be in reducing that function. It seems better, then, to relate consumption to the gross national product (at market price or factor cost). Next, Hansen "corrects" Keynes for stating that the anticipation of "a future fall in the rate of interest will have the effect of *lowering* the schedule of the marginal efficiency of capital." His own argu-

ment (pp. 120-21), however, seems to point to Keynes' conclusion. And finally, according to Hansen: "A reduction in money wage rates in any one particular firm or industry will certainly affect employment favorably. This no one can doubt." Indeed, one can doubt it, unless the statement is to apply only to the employment offered by the firm or industry in which the wage cut is imposed. But these are small points in which the fault, if there is one, is no more than looseness of exposition.

On the whole, this will prove to be an excellent guide; the student who is willing to work should find it very helpful. And Hansen's colleagues will be indebted to him not only for the aid his volume will provide in teaching, but also for the light he throws upon matters of recent controversy such as the multiplier, and interest theory. On these matters in particular, it seems to me, he helps to clarify what Keynes really said.

LORIE TARSHIS

Stanford University

The American Economy. By C. LOWELL HARRISS. (Homewood, Ill.: Richard D. Irwin. 1953. Pp. xliv, 1051. $6.00.)

Since the close of the Second World War we have witnessed the publication of a number of noteworthy textbooks on the principles and problems of economics. To this list must now be added the present volume—one which, on its general merit, should receive a place close to the top.

The writing style employed by Professor Harriss seems to be calculated to capture the attention of the student (and general reader) audience. The "question technique" is frequently used; exclamation points for their dramatic effect are conspicuous (perhaps to a fault) throughout the text; slang is rather effectively introduced wherever its use conduces to a clearer explanation of a point; and chapters are divided by many headings and subheadings, making for easier comprehension by the student. Furthermore definitions do not get in the way of the more important matters of description, explanation and analysis; the abundant use of up-to-date illustrative material and examples from spheres of activity familiar to students; and the use of charts and graphs as an aid in the comprehension and visualization of theories and facts—all add up to a volume that is interesting, clear and even sprightly (no mean achievement in a text).

As for the content, the eight divisions of the book and the various chapters included under each division for the most part strike the familiar, traditional note found in principles texts in recent years. Part I contains the customary introductory material. Part II discusses human and material resources, the organization, financing and size of business units, various aspects of labor unions and national income analysis. Part III concerns itself with money and banking, the value of money, employment theory and business cycles. Part IV treats the subjects value and price, government policy toward monopoly, and public utility economics.

In Part V we find distribution theory covered, along with unions and wages, inequality, social insurance and personal finances. Part VI is on international

economics; and Part VII is on public finance. The last division, Part VIII, gives a chapter each to the problems of economic stabilization, stagnation versus inflation, agriculture, economic growth, and the interrelationship between economics and politics.

Although the author disavows any claim to originality, he does hold that some of the topics he writes about are rarely treated in basic texts. Among the fairly novel subjects are: possibilities of chronic inflation, economic problems of cities, personal financial problems, the tie between economics and politics, problems of budgeting, patents and the patent system, and the bases for good labor-management relations. There are also two appendices on accounting and problems of economy in the federal government. There is no doubt that students will find these additions valuable. Most instructors will find Harriss' text on the conservative side. For example, his discussion of economic stabilization is weighted on the side of potential pitfalls and drawbacks in connection with a positive compensatory fiscal program, with practically no attention paid to the social and economic costs, both national and international, involved in a failure to assume an aggressive role in the matter of the control of business fluctuations. One may also cite his views on taxes on business: he regards them as a "mess" and feels that the burden imposed by such taxes is "like throwing sand in the gears of cars" (p. 918).

By way of general appraisal, the "heart" of any basic text in economics, *i.e.*, the time-honored value and distribution chapters, receive (with the exception of wage theory) adequate and competent presentation and analysis. The other essential for modern texts, the "national income" material, is presented even more successfully. One is also impressed with the quantity and quality of the material generally designated as institutional. Obviously, Harriss is not beholden to any one "approach," but has striven for, and achieved, a successful balance.

There are a number of chapters worthy of particular commendation. The material on labor is outstanding. It is more than adequate for an elementary text and Harriss succeeds admirably in delineating the union movement as a new power capable of influencing the operation and character of our society.

The chapters on money and banking are excellent and are distinguished by a particularly clear exposition of the process whereby bank deposits in a system of banks are expanded. Also to be noted is the chapter on the theory of employment. In line with the current trend, Harriss does not go overboard for the theory, but rather displays a healthy skepticism towards the theory as a vehicle for prediction or as a guide to government action. The excellent graphs in this chapter should add much to the student's understanding of the intricacies of the analysis.

Lastly, the chapter on interest offers a successful blending of the "savings" approach with the Keynesian "money-liquidity preference" emphasis. Liquidity preference is properly placed as a force on the supply side in the determination of the rate of interest.

There are a number of shortcomings and omissions that should be mentioned:

1. Neither in the chapter on marginal productivity, nor in the chapter on wages does the author explain the process whereby prevailing rates of wages are determined. They are taken as a datum and the discussion revolves around adjustment by the employer to given wage rates. It seems to this reviewer that a marginal productivity theory must account for the existence of prevailing or going rates of wages for different occupations. The bargaining theory of wages and monopsony wage situations—each an important topic in wage theory—receive scanty attention.

2. Various aspects of international trade are treated too briefly. Among these are the financing of international trade transactions; the determination of rates of exchange under gold and paper standards; and the theory of comparative cost. The last—comparative cost—also suffers from a lack of clarity in demonstrating the "cheapness" in terms of money costs of imports to a nation enjoying a comparative advantage. Incidentally in this general field, Harriss seems to regard currency depreciation and currency devaluation as synonymous (p. 791). There is more than merely a technical distinction between the two terms.

3. Except for a footnote (p. 938) quoting the policy of the statute, the Employment Act of 1946 is ignored. From certain standpoints there are potentialities in this Act which make it one of the most important pieces of legislation ever passed by our Congress. It deserves more extended discussion in a chapter on economic stabilization.

4. In his Preface, Harriss points to his "somewhat unconventional analysis of income inequality." It is true that certain aspects discussed are off the beaten path, but when he so far departs from the conventional as to totally omit any discussion of proposals for the reduction of inequality, it would seem that he has strayed too far.

5. While on the subject of the unconventional, one should note that Harriss has chosen not to offer a chapter on the "isms." It is true that the volume describes the American economy, but it is also designed as a basic text in the field of economics. In the latter role some instructors will find the omission of a presentation of Russian communism and British socialism a serious drawback. After all, noting contrasts is an important learning device, and analysis of alien systems should be a valuable aid in conveying to students the character and operation of the American system. Furthermore, all beginning students of economics should be introduced to the economic aspects of the alternative systems which challenge our way of life today.

6. To conclude, we should note that on the subject of the parts of the effective money supply that bear on the determination of the general level of prices, it would appear that Harriss is among those who would exclude time and saving deposits (p. 280). In the light of the cogent reasons for their inclusion advanced by Goldenweiser in his *American Monetary Policy* (pp. 18-20), the customary view on time deposits may need revision.

The above list is largely one of omissions. These are matters of personal judgment and therefore should not be stressed too strongly, especially in view of the fact that the volume runs to 1051 pages—a formidable tome. There are

so many admirable features in this book that most instructors will probably agree that it is a notable addition to our list of basic texts.

HARRY P. BELL

Dartmouth College

Economics—Principles and Problems. By ANATOL MURAD. (Ames, Iowa: Littlefield, Adams & Co. 1953. Pp. 322. $1.50.)

One of the principal tasks of the economics teacher is to choose a suitable introductory text. This has become a difficult undertaking, for many textbooks have been published since the end of World War II, partly because of the sales possibilities resulting from the vast increase of student enrollment, and partly because in this age in which everything seems to have outgrown the vision of previous authors, a series of heretofore neglected or newly developed concepts and approaches have had to be incorporated in introductory courses. Hence the flood of texts ranging from revised neoclassical treatments in which subjects such as national income stand out like incongruous islands, to Keynesian and post-Keynesian treatments in which, by contrast, subjects such as demand and supply analysis seem to float like errant ghosts through the mists of the macrocosmos.

Because of this somewhat discouraging situation, an increasing need manifested itself amongst teachers of elementary economics, in their vast majority no longer authors of their own teaching systems, for a volume that could reassemble what the inflation of postwar texts had so successfully diffused. Anatol Murad's *Economics, Principles and Problems* represents such a volume (though it appears in the outward costume of an outline rather than a textbook) which should prove a highly useful companion and coordinating volume to the twenty-one more important recent textbooks for which Murad has prepared a detailed reading guide.

However, in spite of a modest guise Murad's contribution seems to be more than mere outline and more even than mere text. Condensed as it is to fulfill its ostensible purpose, and hidden away as an aid rather than a limelight volume, it nonetheless constitutes perhaps the most lucid over-all presentation of economics to appear in a long time. Its economy of words does honor not only to the economist but the writer.

It would be a paradox to review at length a work, whose principal feature is its condensed luminosity. Briefly, its 322 pages cover everything that is essential to give the student, even without recourse to more explicit texts, a precise picture of the science of economics as it has developed historically and as it is today, of the tools this science uses and makes available, and the problems for which it tries to offer solutions. As it is precise, it is logical in its arrangement. And as it is logical, it is complete. Some of the chapters such as those on money are not only outstanding but original, and are economic writing at its very best.

In spite of these virtues or, perhaps, because of them, Murad's volume is not without some flaws. Here and there the author's love of brevity produces gaps and omissions. Thus, on page 140, the MR curve is not labeled, which, to

judge from the other illustrations, seems an oversight. Some sort of oversight seems also responsible for the fact that the reading guide lists 43 chapters whereas there are only 39. In the chapter on rent, the terms rent, economic rent, and quasirent are not sufficiently explained. Nor is the word surplus, which is introduced here. Surplus income over what? Perhaps all reference to surplus should be eliminated except in connection with Ricardo. In Chapter 7, the defintion of the firm seems too narrow. A firm is certainly more than a mere profit-maximizing unit. While it must, of course, make profit in order to exist, it has many other objectives as well. Finally, Chapter 39, presenting the various economic systems in five pages, is perhaps a bit too sketchy considering the increasing attention economists pay to this subject.

However, these minor shortcomings, few and far between, do not overshadow the unusual virtues of Murad's masterful summary. While it does not replace the more detailed, and yet less complete, normal textbooks, it seems to this reviewer an excellent volume, the style of which should convince other writers that even nowadays it is possible not only to write lucid economics but to do so in good prose.

LEOPOLD KOHR

Rutgers University

Economics for the Citizen. By ALFRED R. OXENFELDT. (New York: Rinehart. 1953. Pp. vii, 746. $6.00.)

Many professional economists will welcome the appearance of this book whose avowed purpose, contained in its title, is "to provide the necessary background for those desiring to understand and take political action on the major economic issues of our time" (p. 33). We have tended to belittle efforts to write economics-in-one-easy-lesson for the public, but at the same time we have felt a need for a systematic presentation of economics for the layman. This book is designed to meet the challenge.

The author selects seven economic issues for description and analysis: relative economic welfare among nations of the world; income distribution in the United States; bigness in business; the rôle of competition under capitalism; inflation and deflation; international trade; and comparative economic systems of the United States, Great Britain and the Soviet Union. A first and a last section of the book attempt to orient the reader toward his rôle in solving these problems in a democracy.

The general procedure followed is to present the statistical evidence with reference to the problem; to use the tools of economic principles to analyze it; and to arrive at some conclusions regarding it. Since the book is not aimed at the textbook field, it does not stress principles, but uses them only as they aid in the analysis of the various questions.

While most issues are handled in a competent manner and the conclusions reached are not dogmatic, the book is open to one criticism from the standpoint of the reader. It is too long. Because of this it is hard to believe that it will reach as large an audience as it deserves.

The length does not insure a well-balanced treatment of each subject. In

some sections there is a disproportionate amount of description and statistics to analysis; the reader surfeits on details. For example, in the presentation of the problem of income distribution, the author spends 24 pages on the description and devotes 4½ pages to productivity analysis, of which 2 pages are criticism of the marginal productivity theory. The remaining 11 pages of the analysis are devoted to institutional factors and more statistics. On the other hand, the section on depressions allows only 4 pages to describe depression and prosperity and no space at all to business cycle theory. Instead the author adopts a total expenditure approach, and the sections designed to analyze "remedies" lack a proper weighting of the variables determining national income. Here, it would seem, the author could have done his readers a service by introducing such tools as the propensity to consume, the multiplier and the demand and supply of loanable funds. By shying away from "theory" the conclusions which emerge might, to the lay reader, seem to be pulled from a hat.

The author is at his best when he asks: which economic system works best? Here he has a good blend of descriptive material and analysis and this should be important reading, indeed, for the "conscientious citizen of a vigorous democracy" (p. vi).

The book is not intended as a substitute for the textbook on principles of economics. But certain sections, such as those on relative economic welfare and comparative economic systems, would provide helpful supplementary readings in an introductory course in economics.

VIRGINIA L. GALBRAITH

Mount Holyoke College

Economic History; National Economies

Aperçu d'histoire économique contemporaine, 1890-1952. By LOUIS POMMERY. (Paris: Librairie de Médicis. 1952. 2 vols. Pp. 421, 301. 600 fr., each.)

Mr. Pommery's two volumes would fit easily into a slim American textbook. And yet, this extraordinary cramming of sixty turbulent years of economic history always remains highly readable and enjoyable for the layman to whom it is obviously addressed.

Such a rare achievement is primarily due to the excellent organization and lucid style of the book. The steady growth of trade and production in the pre-1913 era of cosmopolitan liberalism serves as a background for the boom and bust story of the 1920's, and even more for the variegated pattern of national interventionism in the 1930's fight against a world depression. The second volume opens with a brief review of economic problems and policies during the second world war. There follows a discussion of reconversion in the first postwar years, of recovery under the Marshall Plan, and of the new inflationary pressures arising from the Korean war and the Atlantic rearmament program. The concluding chapter of each volume attempts to summarize and appraise the general trends of events and policies on the eve of the first world war and at the outset of the second half of the present century. The forty-odd

page bibliography, although heavily centered on official sources and French publications, will prove more useful to the reader than the 26-page motley of raw statistical data which complete Pommery's survey.

The simplicity and cohesion of the factual story of these sixty years necessarily involve some sacrifices in comprehensiveness. The searchlight is on France, the United Kingdom, Germany, Russia and the United States, and reaches only briefly and intermittently the other areas of the world. The selection of data strongly emphasizes production and trade and their relative shifts between countries and continents.

Economists trained in the Anglo-American tradition will probably feel exaggeratedly scornful of the interpretative comments on economic policy which Pommery derives from his facts. His defense of liberalism and of "sound" monetary and budgetary policies will often appear naive or partisan to American readers unfamiliar with economic regimentation, spiraling inflation and exchange depreciation. The economic climate of Europe easily explains emotionally—without justifying them rationally—the author's lapses from cold objectivity and economic analysis. He quotes approvingly, for instance, the wildly enthusiastic comments of a German writer, Samhaber, on the effects of economic liberalism on economic reconstruction after World War I.[1] This hardly jibes, however, with the analysis which follows, under the section headings: "Breakdown of Allied Financial Cooperation," "Price Inflation," "Price Collapse," "Monetary Crisis," "Speculation Credits," etc.

The elusive "confidence," dear to every Frenchman's heart since the days of Poincaré, is seen as the magic key to monetary stabilization. The gold standard should be restored as the best way to enforce upon governments the discipline of balanced budgets. There is undoubtedly more practical wisdom in this view than pure theoretical analysis would suggest. On the other hand, it also tends to confuse causes and effects. Isn't the abandonment of the gold standard the consequence, rather than the source, of more fundamental shifts in national economic objectives and policies? There is undoubtedly today an immense scope for improvement in national and international monetary mechanisms and policies. The nostalgia of nineteenth century normalcy, however, may well be one of the main ideological handicaps to feasible, constructive action and to a gradual adaptation of our institutions to a vastly different economic and political environment.

Those who do not share Pommery's philosophy will still appreciate his admirably concise digest of events and should, at the same time, gain from his book a better understanding of the deep cleavage of French society, torn between the urge for overdue social improvements and the deep fears and

[1] "The practical results of the restoration of free markets could not, indeed, have been more impressive. Empty yesterday under a system of economic regulations, the stores filled up as by magic upon the abolition of price control and rationing. Far from endangering the distribution of goods, their disappearance brought about, from one day to the next, an admirable revival of supplies. Men . . . woke up to a new life as soon as profit opportunities offered themselves. Economic freedom and the profit motive revived sleeping forces and called them to active participation in the work of reconstruction." Vol. I, pp. 88-89.

conservatism of a "bourgeois" class ruined by forty years of war destruction and monetary inflation.

ROBERT TRIFFIN

Yale University

The British Economy 1945-1950. Edited by G. D. N. WORSWICK and P. H. ADY. (Oxford: Clarendon Press. 1952. Pp. viii, 622. $9.00.)

This is an extremely well done and useful survey by a group of Oxford University social scientists of the policies, measures, events and developments that characterized Britain's six years under the Labour government following the close of the war. Successive parts deal with National Income, The Structure and Situation of the British Economy by the End of the War, Economic Developments and Policies, The Social Services, Industrial Organization and Policies, and Britain and Overseas. In these parts the authors present careful accounts and searching analyses of the British economy—horizontally, vertically, on the bias, by problems, by policies, by industries and institutions, and by operations. The organization and editing of the book are excellent; it is thorough and tightly interlaced, but it leaves no impression of overlapping or redundancy. Particular portions will have special interest for particular readers (I happen to be quite impressed by Parts 3 and 5), but the book as a whole will appeal to and hold more of its readers than might fairly be expected of a work prepared by ninteen authors. It is well written; many of the chapters are essays beautifully done—alert, sprightly, penetrating and, although loaded with facts, a joy to read. Worswick's conclusion on direct controls (pp. 311-12), in which he manages in a delicately contrived aside to read a much-needed lesson to his fellow economists, is a model of perception, balance and expression.

The book is packed with information, but what is mainly under consideration of course is public policy—the policies embodied in the establishment of particular programs and projects and those that took shape in their administration and operation. In approach and tone the authors are generally sympathetic, but their sympathy does not preclude rigorous analysis and pointed criticism. There are no broad ex cathedra pronouncements, and the criticism is restrained and cautious, but the writers are neither timid nor unaware. In fact, I should say that "awareness" is the most striking single quality of all of the essays. In this it seems to me the authors are reflecting the awareness of so many of those who have been actively associated with Britain's postwar program. The authors raise all of the points worth raising and ask all of the questions that should be asked, just as these points and questions are being raised and asked by those who are directly involved in and responsible for the planning and administration of the program. Not all of the answers are to be found either in this book or anywhere else, but this is not because of insensitiveness or complacency.

For some readers the analyses and appraisals offered by the several authors will be too neutral and dispassionate; for me this quality of the book constitutes much of its charm as a piece of writing, and enhances greatly its value as

an economic document. The period under review, with its wild array of government actions piled on top of an almost impossible economic situation, is peculiarly full of boobytraps (I use the term advisedly); it abounds in "results" that are not results at all, in seductive invitations to second-guessing and to interpreting facts out of context and in ready-made supports for any and all preconceptions that anyone cares to bring to the inquiry. There is so much that simply cannot be traced with accuracy, so much that defies measurement. The sheer facts are that the record of, say, nationalization to date is conclusively inconclusive, and the conclusions "established" by our most convincing authorities on the much-mooted "full employment-investment-inflation" controversy still find their support more in argument than in evidence. The same must be said about most of the projects instituted since 1945, including those of the post-Labour government. This does not mean that useful evaluations and judgments are impossible; it does mean that they are subject to unusual limitations and that they cannot be definitive. The experience both of actors and critics throughout this period establishes the validity of I. M. D. Little's observation (p. 186) that "economic problems, being problems of choice, are, of course, always insoluble."

As the tribulations of the Labour government unfold in these pages, the reader is made aware time and again that few of the problems are *in their essentials* native to Britain and that few of the difficulties are peculiar to "socialism" alone. When, for instance, T. Wilson tells us (p. 247) that "However public spirited the officials of a union may be, it is not always easy for them to be sure whether they are showing restraint in what is really the national interest, or merely betraying the interests of their members," he might just as well be talking about "responsible" leaders of Big Labor or Big Business or Big Agriculture in the United States. And certainly the problems of control and incentive which have plagued the British nationalized industries from the start have their counterpart in every major private industry in our own economy.

The reader is impressed by the near-inevitability of the kind of thing that went on in postwar Britain. Particular projects and decisions were not inevitable of course, but given the physical, psychological and economic condition of Britain at the end of the war, government action of an intimate nature and on a wide scale was as certain as taxes. Despite the tracts which have found their way to our shores (and the domestic crop which they have inspired) the important questions relate not to the extent of government action in bulk ("socialism *versus* free enterprise") but to the wisdom and workability of particular policies and devices. By the way, who are the real radicals in Britain today—Labour which sought to solve the transport problem by giving conventional form to the conventional term "coordination," or Conservatives who, in now throwing the transport industry wide open to competition and discrimination, are proceeding to knock centuries of common law into a cocked hat?

One is impressed too with the staggering difficulties faced by governments drawn (almost inevitably) into the economic tasks of planning and enter-

prise—the impossibility of employing an instrument or taking an action to achieve a given end without spawning or uncovering a dozen results not bargained for or desired. I suppose it is only when one considers the head-in-the-sand alternatives to government action that he is able, shudderingly, to contemplate the awful troubles which government action entails. Essays and books by the hundreds have been written on the disaster of government planning and enterprise, but we continue to plan and we still direct government into new areas in the economy. The lesson for us of the British experience since the war, not spelled out but certainly made evident in this book, is that it is not too early now for us to set our sights and gear ourselves to the preservation of values which we think are important in the years of increased government action—guidance, promotion, regulation and enterprise—which certainly lie ahead.

BEN W. LEWIS

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The Growth and Fluctuations of the British Economy 1790-1850. By A. D. GAYER, W. W. ROSTOW and A. J. SCHWARTZ. 2 vols. (New York: Oxford Univ. Press. 1953. Pp. xix, 528; xii, 1028. $17.00.)

This is by far the most elaborate study that has yet been made of British business cycles before 1850. Every available statistical series relating to prices, foreign trade, investment, industry and agriculture, finance and labour has been assembled, docketed and dissected with an almost medical zeal. The chopped-up remains make their appearance from time to time in the crude state in the succession of narrative cycle histories included in Volume I; and in Volume II, each series is put through the National Bureau of Economic Research's special mincing machine, which fits it out with a cyclical casing and calibrates it against a standard pattern of cyclical behaviour. For the reader who, like the reviewer, wants his statistics raw, the basic data have been microfilmed and can be had on application to the Columbia University Council for Research in the Social Sciences, which sponsored the project from 1936 onwards.

Apart from the original statistical series, including a few that have not previously been published and many that have either not been used or are relatively inaccessible, several new indices have been prepared. There is a monthly index (and various subindices) of share prices from 1811 to 1850; together with Hayek's hitherto unpublished monthly index of share prices from 1820 to 1868. There are monthly indices of wholesale prices of domestic and imported commodities and an index for both sets of commodities combined. Finally, there is an index of business activity and a less formal, but nonetheless interesting, index of cyclical changes, each year being rated from 0 (deep depression) to 5 (major cycle peak).

It may be unreasonable to complain, in the midst of such statistical riches, that there are not enough figures. Yet the reader misses some *general* parameters of the fluctuations that took place. He is given no indication of the size of the national income or of its distribution, of the number of persons

employed either in total or in the main industries, of the scale or pattern of capital investment, of the rate of profit, the ratio of exports to output, and so on. Thus he is presented with evidence of fluctuations in a large number of things without quite knowing which matter and which do not.

It is remarkable, too, that no attempt has been made to construct fresh indices of production. The available indices are made to appear almost worthless as short-term measures of activity but no new index is put forward free from the errors or limitations of Beveridge, Hoffmann and Kondratieff. Instead, the reader is disconcerted to find that, just when he is disposed to write off the indices of all three, back they come again among the principal exhibits, to be put on view at many of the critical points in the argument.

Even the new indices of prices are not altogether satisfactory. The index of import prices is valuable and it is to be hoped that it will one day be supplemented by an index of export prices. But the index of domestic prices turns out to be little more than an index of agricultural prices, with some important items like potatoes left out. Although there are frequent references in the text to the movement of nonagricultural prices, there is no statistical measure of the divergence between agricultural and nonagricultural prices, and no price subindices (*e.g.*, for metals) have been constructed. Of the other indices, that showing the pattern of cyclical change is ingenious and useful, though one would like to know just what series were employed in constructing it and the evidence in favour of some of the turning-points, *e.g.*, 1845, is not altogether convincing.

The statistical material is submitted to a threefold analysis: an historical analysis, cycle by cycle; a theoretical analysis, designed to draw general conclusions both about the cyclical fluctuations and about the secular trend during the period; and a statistical analysis, item by item, on which the theoretical conclusions partly rest. The centre of interest is in cyclical fluctuations, not in the longer-term adaptations in economic structure or in the interactions of the main propulsive forces at work. Even the comparatively brief discussion of secular trends is conducted largely in terms of long waves (although it is critical of the hypothesis); and the emphasis is on price movements rather than on physical quantities and on the secular growth of production along the lines of Professor Kuznets' recent work. In spite of the title, there is comparatively little about the growth of the economy, either in the sense in which historians would use the phrase or in the sense given to it in the theory of economic development.

The cyclical pattern that emerges is largely the one already familiar from studies of the second half of the century, but a distinction is drawn between major cycles, such as those with peaks in 1825, 1836 and 1845, and minor cycles such as succeeded the first two of these. The distinction between the two types of cycle appears to consist, not merely in the greater intensity of fluctuation in major cycles, but in the combination of an increase in the volume of exports, which set the pace in minor cycles, with a large increase in new capital construction, which occurred only in major cycles. There seems little doubt that the minor cycles were characteristically inventory movements

associated with a sharp recovery in exports after financial panics, or resulted, in the war years, from blockade, embargo, and government transactions. There is also evidence of a secular change in the cyclical pattern as the economy became more industrialised and as the expanding volume of fixed capital construction gave rise to a more definite rhythm over a wider area.

In some ways it is a pity that the years covered should fall into two such different periods as those before and after 1815. Fluctuations in wartime may conform—apparently *did* conform—to the same cyclical pattern as peacetime fluctuations, but they can hardly be governed by the same influences. Had the period 1790-1815 been sacrificed in favour of the period 1850-70, which has been very inadequately studied, the contrast might have been more fruitful. What the authors do bring out is that the rate of economic improvement was almost certainly faster in the postwar period, for all its reputation as a time of prolonged depression and chronic deflation, than in the years while the war, and the inflation that went with it, were still in progress. Production and imports, but not exports, grew more quickly; years of depression were slightly, but only slightly, more common; there were very few occasions on which recovery failed to set in within about a year after the cycle passed its peak.

It is reasonable to conclude that the fall in real costs was more pronounced in the postwar period. But it is straining the evidence to attribute to the fall in real costs the whole of the responsibility for the fall in prices from 1815 onwards. Money wages fell too, at least between 1825 and 1836. Nor is it obvious that "in those instances where expansions ended before full employment was reached an inelastic money supply was not primarily responsible" (p. 645). The minor cycles of the late 'twenties and 'thirties seem quite plainly to have petered out because of dear money. Indeed, it may be ventured as a generalization that the surest sign of an approaching depression was a rise in the market rate of discount above the yield on consols. Throughout the entire period between 1834 and 1842 there was only a single year (1838) in which the market rate of discount averaged less than the yield in consols. How then can it be said that "the money supply was ample" (p. 562)?

The impression created by the years after 1825 is one of an economy stuttering towards a state of boom, succeeding only under the impact of a sudden spurt in exports or in railway-building, and often sinking back—as in 1829, 1831, and 1839—under the discouragement of dear money and bad harvests. The boom of 1832-36—dominated, surely, by the rise in exports and not, as suggested by the authors, by home investment—is the single exception. Why was it that the forces that made prices fall from 1825 onwards were so ineffective in preventing them from increasing after 1848? Was the British economy really in top gear after 1825? Was it altogether beyond the power of the monetary authorities to prevent, in some measure, the decline in prices? Or were industrial fluctuations more closely connected at that time with the terms on which agricultural and industrial products were exchanged for one another than the theoretical analysis allows?

Of all the variables, exports of British produce show the highest conformity with the business cycle. Exports to Europe, however, were relatively stable:

It was exports to the American continent, amounting at times to half the total, that accounted for the cyclical pattern. But the volume of such exports, as the authors point out, was not altogether an independent variable: it responded to the flow of British short- and long-term capital to America. The bulk of the exports consisted of textile manufactures, and shipments were just as likely to be affected by financial ease or stringency in Britain as by changes in the rate of consumption abroad.

What is not clear in all this is how comparatively small absolute changes in the value of exports of textiles were translated into changes in the general level of industrial activity. Surely the value of agricultural output changed at least as abruptly *in absolute terms* as the value of textile exports. Were the fluctuations in exports an important causal factor or were they more commonly a symptom of the general state of trade and finance? A second point of obscurity relates to the magnitude of industrial investment. Was this really large enough to set the cycle in motion? And if it was, is it possible to argue that the investment of the boom was financed out of the profits of earlier years (p. 559) unless consumers simultaneously ran down their cash and ran up their rate of spending. A third point of obscurity relates to the market rate of discount. Given that the Bank of England adopted a passive attitude until *after* the peak, how did changes in the balance of payments and in the financial requirements of the public work through to the discount rate? The impression given is that, while bank rate was relatively steady, the market rate was not, and responded at once both when additional imports had to be financed or when, with rising prices and incomes, the public's cash requirements expanded. But the course of the market rate depended not only on the situation in Britain, including the ability of the Bank of England to release bullion, but also on the situation on the Continent and on the ease or stringency of money markets there. Hence there was a second set of external influences (largely, but not altogether, independent) affecting the business cycle in Britain, and although these influences are introduced episodically into the narrative, there is no way of judging whether they exercised any systematic or cumulative pressure.

But it is impossible, in a short review, to do justice to so monumental a study. With its nice blend of history, theory and statistics, its innumerable diagrams, and its sprinkling of quotations from contemporary observers, it is far easier to read than its formidable bulk suggests. The narrative is "in a sense, journalistic" (p. 5), and there is, in fact, just enough to furnish new hypotheses and start off fresh trains of thought without the nasty feeling that all the answers will appear a few hundred pages later.

A. K. Cairncross

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Sugar Country, The Cane Sugar Industry in the South, 1753-1950. By J. Carlyle Sitterson. (Lexington: University of Kentucky Press. 1953. Pp. ix, 414. $6.00.)

That the sugar parishes about New Orleans should have excited the curiosity

of a historian is hardly surprising. Despite almost ruinous setbacks, first by Civil War and later by plant disease, a dominant cane-sugar industry has imposed many unique features on the political economy of this region for a century and a half. Dependent as they were on the domestic market rather than on exports, the antebellum sugar interests were no strong advocates of secession. Nature was somewhat inhospitable to a tropical crop, and production of cane in the parishes rested from the beginning on government assistance, whether in the form of tariffs or direct subsidies, long-term credits or short-term, marketing quotas or federal research aid. Even while they relied on imported labor and foreign technology, the planters remained the paradoxical protectionist wing of a postbellum Democratic party that was committed to freer trade. If the region failed to bar Hawaii, Cuba, Puerto Rico, and the Philippines from privileged access to the United States market, its influence over sugar policy has nevertheless not disappeared. During the period of government control of sugar production since 1934, the Louisiana crop has reached record levels, while a letter from a Louisiana senator to the Sugar Branch, United States Department of Agriculture, more than once has set the tone in the New York sugar market.

Without ignoring the politics, the technology, or the financial vicissitudes of the sugar industry, Professor Sitterson has reserved his fondest research and most inspired writing for his treatment of antebellum planter society. From personal diaries and family correspondence, periodicals and business accounts, he gleans intimate details of the era symbolized by stately mansions along the Mississippi and the bayous. There is no mistaking a certain nostalgia for "the gracious and leisurely life of the mature plantation society" (p. 74). Included are vivid descriptions of the attributes of sugar wealth, the warm hospitality, taste for travel and the fine arts, fondness for hunting and gaming. The planter is also viewed in his dealings with "lesser folk," the overseer who was assigned many of the managerial functions but denied social acceptability, or the Negro slaves whose status might appear odious to a planter's lady but who assured "a disciplined labor force" nonetheless.

That society, some might argue, was destroyed by its own inherent contradictions. From financial accounts, the author finds evidence that the social prestige attached to possession of land and slaves was inflating production units beyond their economical size as well as raising plantation capitalizations out of all relation to their prospective earnings (p. 164). Ostentation, expensive pleasures, and high living were leading to extensive overborrowing. Reliance on slaves evidently delayed introduction of improved equipment that called for more than unskilled labor (p. 154). Civil War or no, drastic changes in the organization of the industry could not have been long delayed (p. 227). Under pressure from a prolonged price decline, the number of sugar mills had begun to fall even before 1861 (p. 29).

Not social conflict, Marxist-style, but innovations in cane-sugar technology brought a transformation of the industry. Gone were the days when every planter could have his own processing equipment, grind his own cane in primitive mills, boil the juice in inefficient open kettles, and sell a final sugar of uneven quality directly to sugar buyers from Cincinnati, Louisville, St.

Louis, or Pittsburgh. Instead, new but expensive evaporating equipment was assuring a more uniform product, improved methods of extraction were raising the grinding capacity of the factory, and railroad haulage was expanding the region from which a single factory could draw its cane. The significance of these changes was evidently lost on the old-line planters, whose inclination was to restore the industry after 1865 pretty much on the previous basis (p. 251). Indeed their main limitation as a social group seems not that they lived too well or delegated too many of the functions of management, but that, even when they provided half the nation's sugar, they coasted along largely on borrowed techniques, and contributed too little to scientific progress regarding their commodity.

The author is alert to new techniques in agriculture and industry. But vital links in the process of modernization that brought central sugar factories to Louisiana in the 1880's and 1890's, and helped create a class of medium-size independent cane farmers, are unfortunately missing from the narrative. One surmises that most innovators were bred off the plantations, like Leon Godchaux, or outside the parishes, like Daniel Thompson. Agricultural practices reflected a certain inertia for decades after the modern factory had established itself. Sources are somewhat too parochial for drawing a clear distinction between those novelties initiated in Louisiana and those merely borrowed from abroad. Of the more recent agricultural phase, during which a late bulwark of the slave economy became the first region in the world to mechanize the harvest of standing cane, there is little discussion.

BORIS C. SWERLING

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20 Giants of American Business: Biographical Sketches in Economic History. By WALTER WILSON JENNINGS. (New York: Exposition Press. 1953. Pp. 480. $5.00.)

The 20 "giants" are: McCormick, Oliver, Legge, Armour, Carnegie, Duke, Rockefeller, Cooke, Morgan, Mellon, Vanderbilt, Harriman, Ford, Girard, Astor, McDonogh, Dollar, Marshall Field, Woolworth, Rosenwald. The purpose of the book is to present "side lights on economic history" (Foreword) which include much detail about the physical build, religious attitude, family life, abstemiousness, philanthropic activity and obituary notices of these businessmen. There are abundant anecdotes and some witless stories, as for example those proving Mellon's sense of humor. More attention is given to personalities than to the innovations of the entrepreneurs. The better of the sketches (*e.g.* McCormick) reflect sound biographies (Hutchinson); others are weak as where Professor Jennings relies too heavily on authorized biography (Mellon). He has overlooked Sward's book on Ford and Lane's on Vanderbilt, both better than the sources used. The slur on Stuyvesant Fish (p. 263) is unjustified. The author's ideal is Elbert Hubbard, "that prince of biographers" (p. 35).

JOSEPH T. LAMBIE

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Soviet National Income and Product in 1937. By Abram Bergson. (New York: Columbia University Press. 1953. Pp. viii, 156. $3.75.)

This volume (a revised and elaborated version of a study that appeared in the *Quarterly Journal of Economics* for May and August, 1950) will be of interest to those working in the field of national economic accounting and those concerned with the problems of the Soviet economy.

Its major contributions to the former field are the accounting structure that is developed for summarizing income and product flows in terms of current rubles; the valuation adjustments that are made in order to obtain a better view of the distribution of the real productive resources whose services are reflected in those flows; and the ingenious manner in which coherent estimates are pieced together from scattered and incomplete data sources. The study significantly advances our understanding of the Soviet economy by a cross-section view of the economic structure for 1937 in terms of interrelated income and product flows.

Organization as well as language are lucid and the major results stand out clearly. Nevertheless, substantial demands are made on the reader who wishes to follow precisely some of the detailed reasoning. For this a thorough knowledge of the principles of national economic accounting is necessary, and of the now extensive literature relating to income valuation, which dates approximately from J. R. Hicks: "The Valuation of Social Income" (*Economica,* May, 1940). In addition, the discussion is highly condensed and for that reason sometimes difficult to follow.

Chapter 1 is introductory. In Chapter 2 the information on Soviet national income and product is presented in current rubles, in the form of several accounts and tabular statements. Basic are an income and outlay account for households, a consolidated net income and outlay account of government, social, and economic organizations, and a table showing net national product by economic sector. Additional information summarizing the government budget is also given. The discussion is organized around this material. The general nature of the accounting framework as well as the detailed entries are explained. Statistical sources and methods are described in separate appendixes.

The accounting system is elegant. The consolidated net income and outlay account of government, social and economic organizations is particularly ingenious. In terms of the accounting system used by the Department of Commerce, it is characterized by the author as "... apart from the transfer items, a truncation of the gross national product account ..." (p. 19). The present reviewer has found it more helpful to think of it as a consolidation of the government receipts and expenditures and of the gross saving and investment accounts, except for a somewhat different treatment of social and economic organizations ("nonprofit institutions" in Department of Commerce parlance). It manages to present a great deal of important information. At the same time, because of its consolidated nature, some problems of statistical estimation are avoided. For instance, a government surplus consistent with the national accounts need not be calculated because it appears on opposite sides of the gov-

ernment and the saving and investment accounts and cancels out in the process of consolidation.

The major shortcoming of the accounting structure is, nevertheless, the excessively consolidated nature of this particular account. The author himself must have been aware of this liability, because he also presents a separate government budget. But unfortunately not all the entries in that budget are coordinated with the entries in the economic accounting system so that it cannot be related precisely to that system, of which ideally it should be an integral component.

In addition to the elaboration of a government budget integrated with the rest of the accounts, separate accounts for enterprises and for social and economic organizations would significantly enhance our knowledge of the Soviet economic structure. Undoubtedly, the author must have felt that deficiencies in the basic data made it inadvisable to establish separate accounts of this type.

The handling of the various entries in the two major accounts reveals an impressive mastery also of the details of national economic accounting. A careful study of the definitions and of the procedural notes shows that the author has full grasp of technical complexities, such as the accounting for imputed income and for associations of individuals, of which ordinarily only those technicians are aware whose full-time occupation is national economic accounting.

The present reviewer is less qualified to pass opinion on the use that is made of the basic data sources in deriving the income and product estimates, since he has no independent experience with Soviet statistics. But a reading of the statistical appendixes suggests ingenuity and careful craftsmanship.

Note having been taken of the fact that a current ruble standard of valuation may fail to throw light on certain basic questions which are addressed to national income statistics, the elements of the "Adjusted Factor Cost" standard of valuing national income and product are set forth in Chapter 3. As a background two ideal standards are discussed: the "Welfare" standard, which is best adapted to welfare comparisons, and the "Efficiency" standard which is best adapted to studies of resource use and allocation. The adjusted factor cost standard is directed towards the latter objective.

In Chapter 4 Soviet national income and product are revalued in terms of the adjusted factor cost standard. The adjusted tabulations refer to national product by use (the various forms of consumption and investment) and by economic (industrial) sector.

The present reviewer found these two chapters stimulating, but somewhat less successful. Some of the details of the argument appear to be unduly difficult to follow. A less condensed discussion would have made the task of the reader much easier. The theoretical and statistical analysis given is essential to the proper evaluation of the results. But it is interesting to note that in the end the only important valuation adjustments made are the conventional ones of deducting indirect taxes from national product at market prices and of adding subsidies. Other possible adjustments (such as of profit rates, of the value of agricultural output, and of urban-rural labor income differentials) are

also considered carefully. The reader gathers the general impression that if these adjustments were introduced they would not be important quantitatively in the aggregate. But this is not stated outright, nor does it seem quite convincing.

Thus, in departing from the valuation in terms of current ruble market prices, the author does not get much beyond the conventional national income (at factor cost) concept. In view of this, his comments on the national income concept (p. 23, text and footnote 3) seem less than fair:

> In its calculations, the Department of Commerce also makes use of a concept *national income,* so called, which corresponds to the concept of *national income at factor cost* as used by statisticians generally, i.e., it represents the *net national product* or *national income at market price,* less business taxes and transfers and certain other types of charges included in the value product but not considered as a part of the income of business enterprises and households. This particular concept seems to be of very limited interest in reference to Soviet conditions, where the distinction between business taxes, on the one hand, and the profits of state enterprises on the other is apparently of rather conventional character. (. . . Insofar as in its latest revision the Department of Commerce draws a line between corporate income taxes, on the one hand, and business taxes on the other, the precise significance of its concept of national income even in regard to capitalist conditions is blurred.) The magnitude of Soviet National Income in this sense, however, may readily be computed: Taking as the comparable concept in Soviet conditions the net national product less incomes of economic organizations allocated to special funds, the turnover tax and miscellaneous indirect taxes, we get a total of 197.3 billion rubles.

To this reviewer the above explanation does not seem to be correct. Incomes of economic organizations allocated to special funds are not deducted from net national product to arrive at national income at factor cost, as the author asserts (see the treatment of contributions to social insurance and to private pension and welfare funds in the U.S. accounts. Enterprise contributions to trade unions in the U.S.S.R. have no analogue in the United States.) On the other hand, subsidies (not mentioned by the author) are added. In fact, the U.S. definition of national income is identical to the adjusted measure of net national product used by the author (218.1 billion rubles) with the exception of (a) the classification of a small amount of miscellaneous indirect taxes, which in view of their motley nature (p. 35) should hardly be singled out as a case of divergent principle, (b) a short-cut treatment that is given to the profits of government enterprise in the U.S. accounts, mainly because they are negligible in quantity, and (c) the handling of an unimportant category of business transfers which have no counterpart in the accounts developed by the author.

It may be noted that in spite of his protestations the author even follows the conventional practice of classifying business taxes: taxes on incomes of collective farms and payments from profits of state and cooperative enterprises to the government budget are included in his adjusted measure in

analogy to the inclusion of corporate income taxes in the United States and similar estimates of the national income.

It has recently become fashionable to disparage the national income (at factor cost) concept by pointing out its grave limitations as a measure of resource use and allocation, essentially because the factor incomes which it reflects are not those of substitutable factors registered in a state of competitive equilibrium. The passage quoted will undoubtedly be interpreted as supporting this view. It is important to note, therefore, that *de facto* the concept is regarded as adequate by the author for analyzing the economic structure of the U.S.S.R. Also, how much more satisfactory must national income then be for the United States where, if a proper period is selected, the degree of substitutability and equilibrium would certainly not be less than in the U.S.S.R. in 1937 and the degree of competitiveness would obviously be greater.

In Chapter 5 certain economic implications of the estimates are summarized. They refer to the propensity of households to save; the sources of Soviet finance; surplus value; the relation of the government budget to the national economic accounts; and the allocation of resources among end-uses and among industries.

Some of the salient features of the Soviet economic structure emphasized are as follows: The average propensity to save of Soviet households appears to have been smaller than that of American households in 1937. The turnover tax was an outstanding source of the finance of capital formation and of communal services. ". . . the Russians in 1937 invested a good deal more and consumed less of their national income than we did of ours in the same year." (This conclusion is discussed further in the light of data on U.S. capital formation in the nineteenth century, the relative magnitude of defense expenditures in the two countries, and the different composition of capital investment.) Industry and construction accounted for approximately the same percentage of total output in both countries in 1937. A much larger share of agriculture in the U.S.S.R. was counterbalanced by a much smaller proportion of trade and finance.

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Soviet Economic Growth. Edited by Abram Bergson. (Evanston, Ill.: Row, Peterson and Co. 1953. Pp. vi, 376.)

This book consists of reports, somewhat revised, presented at a conference in May 1952 under the auspices of The American Council of Learned Societies and The Social Science Research Council. The aim of the conference was to study the development of the Soviet economy, the factors that have conditioned its development, and its long-term prospects.

In order to obtain a uniform interpretation of the notion of "long-term" the participants were asked to take as the terminal date, if one had to be chosen, the year 1970. The group was also to assume no general war between now and that date.

The volume contains 12 reports together with commentaries. The first two reports deal with "National Income" and "Capital Formation and Allocation," written respectively by Gregory Grossman and Norman M. Kaplan. These two reports and their commentaries take up more than a quarter of the volume. The following two reports are concerned with "Population and Labor Force" (Warren W. Eason) and "Transportation" (James H. Blackman). Industrial problems are the subjects of three further contributions, one devoted to an account of Soviet resources (Chauncey D. Harris), the second to labor productivity (Walter Galenson), and the third to production (Donald R. Hodgman). Three reports deal with agricultural problems: resources (V. P. Timoshenko), organization (Lazar Volin), production and employment (J. A. Kershaw). The last two reports are on "Soviet Economic Relations with the Orbit" (Olëg Hoeffding) and "East-West Trade" (Harry Schwartz).

The order in which these contributions are presented might be questioned. It would have been better if the study of industrial and agricultural resources and of population and the labor force had preceded the other reports, since the Soviet's resources and its labor force are the basic factors in any explanation of its economic evolution to date, and in forecasting its future development. However, such a criticism of the plan is of little consequence since—and this is one of the fundamental objections to this volume—practically none of the conclusions of any one report has been used as a point of departure by the following reports. Even more notable, one often finds in this volume contradictory conclusions and estimates side by side.

The reader cannot help but be struck by the wide gap between the ambitious purposes of those who initiated the conference and the limited and imperfect knowledge of the Soviet economy shown in the West. The weakness of this knowledge concerns not only minor points or special aspects of the Soviet economy but even the basic facts needed for an understanding of the direction and amplitude of its evolution. This is due to the inadequacy of statistical data and, in addition, as we see it, to a frequent tendency to correct the available data by adjusting them to "Western" definitions, despite the absence of the information needed for a scientifically useful adjustment.

One of the fields where the absence of precise statistical data is most evident, thus making projections very uncertain, is that of population. What is the actual level of the Soviet population, its age composition, its distribution between the cities and the countryside; what are the rates of mortality, of birth and of fertility; what is the composition of the working population? There are so many questions like these to which the answer in the West is given only by rough estimates based upon incomplete data.

The report by Eason on "Population and Labor Force" represents one of the most interesting efforts; unfortunately the sources he has used and the detailed deductions upon which he bases his conclusions could not be presented in the report for reasons of space. In spite of Eason's achievement, however, and the prudence shown in his evaluations based upon two different hypotheses concerning the postwar population trends, some of his conclusions could be questioned, particularly—as his commentator, Frank Lorimer, has observed—

because he has undoubtedly understimated the importance of the female working population, particularly in agriculture.

One of the notable conclusions at which Eason arrives is that the nonagricultural working population can be expected to double between 1950 and 1970 as a result of a net increase in the total working population, with no need for a shift from the agricultural working force. It would have been interesting if this conclusion had been taken up again, or at least discussed, in one of the following reports, particularly in the one on "Agricultural Output and Employment." Unfortunately this paper starts from quite a differen. point of view, since one of the questions raised is about the conditions under which one part of the agricultural working population could be "released" to be incorporated in the nonagricultural working population.

It seems that, first, two questions should have been examined in detail (but the first of them not necessarily by the author of the report on "Agricultural Output and Employment"): (1) Is such a release to be foreseen, and if so under what conditions or hypotheses? (2) Could not such a release lead to an increase in average productivity?

The first question has been raised at the beginning of the book by Grossman in his report on National Income (p. 21), but in a way that does not permit any formal conclusion. The fifth Five-Year Plan has answered it, after the event, by foreseeing a 15 per cent increase in the number of workers and employees, an increase which according to Eason's estimates seems to go hand in hand not only with a stable agricultural labor force but even with an increased one.

The second question has been raised by Kershaw, although he has answered it only hypothetically, and the hypothesis which he adopts carries with it a negative answer to the question. However, as Bergson in his commentary on Kershaw's report has noted, there is some basis for the view that there is still a relative surplus of agricultural population, so that this population *could* diminish without compromising total production. Obviously this does not mean that such a reduction of the agricultural population would actually occur in the development of the Soviet economy; on the contrary, there are a good many reasons for believing that this surplus population could be employed in agriculture to increase production in some of the insufficiently developed branches, such as cattle-raising—and this implies additional investment in agriculture.

As we have noted, the tendency to adjust the available statistical data renders a good many applications rather hazardous. This observation applies particularly to Grossman's report on National Income. This report is based, in large measure, upon Naum Jasny's studies of "real 1926-27 prices," but his evaluations rest upon aggregations which seem to be highly arbitrary and which lead, as Blackman has noted in his report, to an underestimate of the rate of growth.

The reproach of arbitrariness can likewise be justified in the case of the index of industrial production presented by Hodgman in his report, an index calculated for total production though, in 1934, it covered, at the most, 55 per

cent of the value added by Soviet "large-scale industry," a percentage which fell sharply in the following years. In our opinion, indices of this sort do not make possible any reliable conclusion; their use, besides, can lead to most contradictory inferences.

Another example of a more than hazardous manipulation of statistical data is Kershaw's adjustment of data for cereal yields per hectare. The discussions of the official reports on crop yields are well known, in particular with regard to the question whether data after 1933, unlike earlier data, are in terms of yields "on the root," or instead are in terms of the size of the "barn crop." In the former case the official data, from 1933 on, would have to be reduced by a certain percentage in order to be comparable to the earlier data. Kershaw concludes that such a reduction is needed and that it should amount to 20 per cent. Accordingly it turns out that the average yield for the years 1933-39 would be less (even considering the good years of 1937 and 1939) than the average yield in the period 1925-28, which is an unlikely result. By using a correction factor of only 10 per cent (a figure accepted by many authors who believe that the official data already allow for a loss of 10 per cent) the average yield would have slightly increased. And if we grant that the official figures take into account the same percentage of loss before as after 1933 (which is our own opinion, as well as that of some other specialists, notably A. Baykov), the conclusion follows that the average yield has increased considerably.

We have dealt at length with this question because it illustrates how the statistical manipulations which are to be found in some of these reports lead, not only to modifications of the pattern of the variations, but even to a reversal of their direction.

More generally, most of the reports suffer from a lack of effort to understand or analyze the economic laws applicable to the Soviet economy. They accordingly do not make clear enough distinctions between the successive periods through which the Soviet economy has passed and omit any indication of the characteristics of these different periods and of the way in which these features have developed. What is worse, certain interpolations imply a view of the laws of the working of the Soviet economic system which has little in common with reality as observed objectively.

These various shortcomings explain why so many aspects of the Soviet future, as seen by the authors of these reports, are so often contradictory to those set forth in the fifth Five-Year Plan and in recent directives of the Soviet government.

The critical character of these different observations should not make one lose sight of the undoubted interest of this work and the information it contains, as well as the special value of some of these reports, notably, in our opinion, and despite our reservations on various points, the ones by N. M. Kaplan and W. Galenson.*

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* This review has been translated from the French version by Inga Tarshis.

The Progress of Underdeveloped Areas. Edited by BERT F. HOSELITZ. (Chicago: University of Chicago Press. 1952. Pp. x, 296. $4.75.)

It is difficult to appreciate the purpose of this volume. The editor, who is director of the year-old Research Center in Economic Development and Cultural Change at the University of Chicago, intended the 1951 Harris Foundation Lectures, which the volume reproduces, to contribute to fuller and better communication between specialists in several social science fields and public policy-makers, with the hope that thus the groundwork might be laid for a unified conceptual framework to which all social sciences could subscribe. The reader will have little difficulty in recognizing the value of "breaking the bounds of traditional economics" (p. vii) as long as he and the authors stay on a descriptive plane. As soon as the authors proceed from there to analyze (and fortunately a few dared to make use of the tools of analysis peculiar to their science) and formulate generalizations, the limits of conventional disciplines reimpose themselves and prove in fact indispensable to an understanding of the authors' contributions. The editor, who has had some experience in applying the tools of industrial economics to El Salvador, can hardly be blamed for this discouraging result. It must of necessity be the outcome of all endeavors to achieve such integration, because there is as yet no synthesized set of analytical tools permitting the formulation of a general theory of change—economic, social, cultural and political. Nor has anybody succeeded in translating via a common denominator the criteria of, *e.g.*, disequilibrium in the balance of payments of an underdeveloped country into terms which have meaning in the anthropologist's definition of *anomie* arising from a contact between incompatible cultures.

Part I of the Lectures was apparently designed to derive some generally valid propositions from the history of formerly underdeveloped countries. But here Harvard's Alexander Gerschenkron, in an eloquent essay on "Economic Backwardness in Historical Perspective" warns the reader that the historian can contribute only "*potentially* relevant" factors which could not be easily perceived within the limited experience of the present. Yet Gerschenkron succeeds so well in stripping the 19th century industrialization movements in central and western Europe of the unique and in bringing out the recurrent that the reader forgets the initial caveat. His most significant proposition is "that the advantages inherent in the use of technologically superior equipment were not counteracted but reinforced by its labor-saving effect." High unit labor costs in Asia today seem to bear out his interpretation of history to the effect that the most up-to-date equipment is needed to overcome this handicap. Drawing on his intimate familiarity with certain institutional instruments (especially banks) and their mode of operation in the 19th century he throws light on the essentiality today of effective credit systems. The writings of French economists and politicians of the early industrial period offer proof that in the final instance "development ideologies" especially tailored to the national climate broke through the barriers of stagnation. In his view the living generation in the backward countries will have to rally around the equivalent of de Lisle's "Industrial Marseillaise" or Marx's dialectical ma-

terialism if they want to disturb the underdevelopment equilibrium.[1]

The late Robert K. Lamb of the Massachusetts Institute of Technology saw in the emergence of the commercial urban élite, particularly after it had developed a method of self-perpetuation in alliance with the landed gentry, the clue to the rise and success of machine civilization in the United States. The connection with the topic of the volume gets only brief notice, too brief to be convincing: The United States corporate entrepreneurship, having grown big and rigid, cannot aspire to develop underdeveloped countries except on its own terms, demanding profit and the loss of sovereignty as its price.

While Harvard's Oscar Handlin merely gives some sketchy glimpses of the migration of skills into the United States (5 pages), which should have been elaborated on, W. T. Easterbrook of Toronto University describes in detail the vascillating rôle of the Canadian government in economic growth and undermines some well-known clichés.

Part II, devoted to cultural aspects of economic growth, includes contributions by Yale's Ralph Linton, Melville Herskovits of Northwestern, Princeton's Marion Levy, California's Walter Goldschmidt and Cornell's Morris Opler. This *crème de la crème* of the nation's anthropologists hammer away in over 100 pages at the noneconomic and nontechnological dimensions of economic growth. Far from satisfied with describing those culture traits which are hospitable and those which are inhospitable to economic and technological change, each of the authors advances his own philosophy as to how to deal with cultural resistances, social disorganization, mental illness following exposure to advanced technology.

Yet, the historians among the contributors to this volume fail to discover any fundamental ill effects of the violent social changes, if not revolutions, which accompanied the midwifery services rendered by advancing technology in earlier periods. Moreover, Morris Watnick, a political scientist of the Department of State and contributor of an excellent, well-documented essay on the "Appeal of Communism to the Underdeveloped Peoples" in Southeast Asia, warns of the political urgency of channeling drastic changes already under way which, if not exploited by the West's development efforts, could not fail to push the East's intelligentsia towards embracing communism. In healthy contrast to the anthropologists' emphasis on village and tribal traits Watnick attributes a crucial rôle to the conditioning of the educated élite by the West's imperialism and the attraction of China's communism.

In Part III of the lectures, Samuel Hayes, Jr., of the Mutual Security Agency, an economist thoroughly steeped in the administration of an aid program in Indonesia, matches the cultural cautions of the anthropologists with an equally impressive catalogue of the many economic and political resistances a development program encounters in practice. Among eight major social groups in a typical backward country he discovered obstacles such as: paucity of return from and economic risk of innovations; disdain of and poor

[1] Without the advantages of Gerschenkron's historical erudition, six United Nations experts agree with him on this. See their *Measures for the Economic Development of Under-Developed Countries* (New York, 1951), p. 15.

pay for manual work; retrogressive land tenure institutions; excessively timid or speculative business venturesomeness; food consumption habits wasteful of scarce resources; labor inefficiency because of lack of training; administrative incompetence of government; and lack of training and adaptability of the participating foreign technicians. Because social scientists other than economists have failed to transform the variables of resistance to social and technological change into quantifiable or otherwise measurable terms, he found their warnings dramatic but hardly useful—too eager and fast in telling him what acts to *omit,* but too slow and vague in advising on acts to *commit.*

Five lectures deal with economic aspects of economic development and U.S. aid programs (pp. 175-285). Jacob Viner addresses his remarks on "America's Aims and the Progress of Underdeveloped Countries" to non-economists. After contrasting objectives and methods of capital investment under British and French direction with the American grant and loan policy of the postwar period, he engages in an entertaining exercise of semantics and algebra of averages to arrive at his definition of desirable economic development: growth which not only raises average per capita output and income, but also improves the standard of living of the majority of the people, without impairing that of any single class, *and* also decreases the "number of those living at less than some minimum level of income." Having thus included the United States of 1953 in the category of in-need-of-development countries, Viner differentiates between "humanitarian" and "aristocratic" investment in growth. The former ameliorates diet, health, housing, education of consumers directly (presumably by public investment in social services and facilities) while the latter diverts available surplus resources (and foreign aid) into productive forms of physical capital, giving birth to a continuing progeny of further investments. Though ready to accuse planners both within and without the underdeveloped countries of flinching from this issue, Viner fails to give even hints as to the criteria which might favor one over the other approach in broadly defined situations.

Among Viner's other topics, selected more or less at random, is the controversy over priority of investments in agriculture or industry. In deploring frank discussion of this matter among competent economists, Viner apparently overlooked the superior treatment in the above-mentioned United Nations experts' report on *Measures* which came to the same decisions as he did, namely that correct decisions in this rather spurious differentiation between wholesale categories of projects must be based on differences in prospective long-run returns to invested resources. Ordinarily, Viner expects the return on investment in primary production processes to be higher because of the relatively more abundant (and cheaper) resources used up by them. The rest of the paper gives wise counsel on miscellaneous policy matters, noteworthy among which is his call for a liberalized United States trade policy which will yield much more capital to exporting underdeveloped areas than painfully appropriated annual government hand-outs. This topic has since been more fully and formally developed in his *International Trade and Economic Development.*

The Point Four Program and its tribulations are more specifically dealt with by Konrad Bekker, an economist attached to the U.S. Embassy in Delhi, and George Hakim, formerly economic counselor at the Lebanon Legation in Washington, since then foreign and economics minister in his country. Bekker's contribution is meritorious for three reasons: Backed by his field experience in South Asia he relegates many of the anthropological preoccupations with "shrinking-violet cultures of primitive peoples" to classroom study, holding that many value systems can be, and have historically been, changed without damage. Because of its cultural timidity, considerateness, and permissiveness, the Point Four program is seen as quite out of keeping with Asia's experience in adopting and digesting—with great benefits to its indigenous culture—the powerful political and cultural message of Buddhism, Hinduism and Islam. The sophisticated Indians, Ceylonese and Burmese are prepared to face nonviolent proselytizing of the American technician who can demonstrate the value of his culture. Second, Bekker destroys effectively some oversimple notions of the character of an underdeveloped economy, some of which are defended by Samuel Hayes. Decades of handsome export surpluses, ready adoption of innovations (in peanut, rubber cultivation) and absence of "absolute resistance to involvement in a money economy" have accompanied a substantial "producers' margin above consumption" and an "astonishing magnitude of their ability to save in terms of labor availability." Thirdly, Bekker is the only author who makes a courageous stab at establishing measurable criteria for determining priorities among alternative uses of local resources and external aid. New technologies to be useful should be: (1) "capital extensive" because they make the scarce resource, capital, go farther; (2) "easily transferable," that is, should fit easily into the existing complementary and auxiliary supply, service, and transportation facilities; (3) "productive of realizable results," that is, should return benefits that can be mobilized for further development (Viner's "aristocratic" investments); (4) "geared to the most underutilized resources," thus turning overpopulated areas to the use of simplest technologies, even if less advanced than those generally applied in the area (conflicting with Gerschenkron's historical derivations); (5) "flexible," that is, those using the minimum quantity of specialized skills and equipment. Though Bekker fails to attach weights to his criteria (which he would need to do in order to make them workable) his illustrations show that they are heavily loaded in favor of subsistence farming and social, professional and administrative services (Viner's "humanitarian" investments).

Hakim, in a somewhat superficial lecture on the "viewpoint of aid-receiving countries" rejects technical change which increases the wealth and power of reactionary governments and owners of means of production and proposes direct aid to the impoverished masses of the people, both technical and financial. Though aware of the odious interference of imperialist powers in recent history, he sees no danger in this type of "progressive" interference in the aided country's internal affairs. A prerequisite is the carrying out of homegrown basic social reforms, especially of land tenure.

Only two economic papers are of a technical nature. Henry S. Bloch of the

United Nations' Fiscal Division describes the varieties of fiscal and monetary policies most appropriate to the different types of underdeveloped economies. He warns against excessive reliance on domestic spending because most underdeveloped countries do not possess a developed fiscal machinery to cope with the concomitant inflationary forces, or start from too narrow an economic base to avoid inflationary spending.

Albert O. Hirschman, a new convert to development economics, relies in his contribution, "Effects of Industrialization on the Markets of Industrial Countries" on a rather academic interpretation of United States policy towards industrial recovery in Europe as giving clues to the direction of the U.S. Point Four and financial aid programs in underdeveloped countries. In spite of the extremely moderate allocation of Point Four funds for industrial experts, and official policy statements to the contrary notwithstanding, Hirschman asserts, and perhaps hopes rather than proves, that the United States will further the industrialization of backward areas. In an erudite literary tour de force he constructs a contrast between German intellectual hostility towards industrial capitalism (as reflected in the writings of historians, sociologists and Marxists) and the buoyant passion for industry in the United States. This is supposed to explain the fears about doom threatening German industry as a result of industrialization overseas. Besides leaving the misleading impression that Frick, Krupp, Schacht and others may have shared this apocalyptic view of the effects of Germany's striving for machinery exports, the approach disregards the fact that Germany, and to a certain extent England, had reasons for fearing long-run damage to their status precisely because they failed to fulfill two of the so-called "Staley conditions" for successful competition, *i.e.,* (1) actively to develop new and improved processes so as to attain a higher level of specialization, and (2) to maintain a sufficient degree of mobility and adaptability of their resources. Nevertheless, Hirschman effectively destroys illusions held in some American industrial circles about the net decline in exports to be expected from industrialization of underdeveloped areas, and tenders the Staley rules as applicable medicine.

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Statistics and Econometrics

Demand Analysis. By HERMAN WOLD in association with LARS JURÉEN (New York: John Wiley. 1953. Pp. xiv, 358. $7.00.)

Professor Wold has written this book to meet two objectives. First, the book is a summary report on the results of a study of consumer demand made for a government committee in 1938-40. The full report of the study was published in Swedish in 1940. Secondly, the book is designed as a textbook in a more or less specialized area of econometrics. A number of excellent exercises have been included as a means of furthering the second objective.

The book is divided into five parts. Part I is an attempt to satisfy the reader who desires a brief summary of the methodological problems involved and of

the results obtained in the empirical work. This section contains a discussion of causality which is unsatisfactory. Recent work in the causality area has made it possible to clarify thinking on this problem, and it is hoped that Wold will not allow the discussion in this book to stand as his final words on the subject.[1]

This first section also contains a good summary of regression analysis, including a number of points currently controversial. The author's discussion of the Cowles Commission work in this area tends to be too polemical and too brief. However, his heavy emphasis on the importance to regression analysis of the considerations of the subject matter being analyzed is an important point, and one that tends to be ignored by some mathematical statisticians. Wold is on solid ground when he maintains that the main source of controversy in regression analysis is the causal analysis and that these controversies, for the most part, result from ignoring the fact that the hypothesized model must be supported by the substantive material being analyzed.

Part II is a mathematical formulation of demand theory and should interest the economic theorist, though it is rather heavy going. An axiomatic approach is taken and the classical theory of demand is developed mathematically. A number of interesting topics are briefly discussed, but a more detailed discussion of some topics, for example, the probabilistic approach to demand theory, especially the *Theory of Games* work and the integrability condition would have been desirable.

Part III takes in some of the advanced work on time series analysis, including some of Wold's own original contributions to the field. The work is quite condensed, unfortunately, and uses mathematical concepts with which economists in general are not familiar. The work in this part, as well as about half of Part IV, on regression analysis, is primarily for the mathematical statistician.

The data analysed in the empirical portion of the book consist of cross-section data, derived from family budget surveys for 1913, 1923, and 1933, and market statistics for the years 1921-1939. Chapter 14 discusses the methodology used for the family budget data and Chapter 15 the methodology for handling market data. Part V (written by both Juréen and Wold) summarizes the empirical findings, including the results of a consumption forecast for 1949-50. Chapters 14 and 15 of Part IV and all of Part V should be of interest to the economist.

The empirical work is of an extremely high caliber. It is an excellent example of the combined use of economic theory and statistical techniques—the kind of work that is badly needed in economics and rarely seen. The actual basic method of analysis is linear logarithmic regression to determine price and income elasticities. The cross-section data are grouped according to income and then analyzed. The results of the cross-section analysis are utilized in the work on market data as a means of avoiding the collinearity problem, which arises because of the high correlation between price and income. By

[1] H. A. Simon, "On the Definition of the Causal Relation," *Jour. Philosophy*, XLIX, 517-28.

utilizing the results of the work on budget data, conditional regressions can be computed and the difficulty avoided. This brief summary hardly does justice to the richness of the techniques used.

The faults of the book, it seems to me, derive from the attempt to write a research report and at the same time a textbook in a specialized area of econometrics. As a result, a conglomeration of topics is discussed, and the reader wishes that more time could have been spent on fewer. From the methodological point of view the book is extremely significant, particularly because of its resuscitation of regression analysis.

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Studies in Econometric Method. By Cowles Commission Research Staff Members. Edited by WM. C. HOOD and TJALLING C. KOOPMANS. Cowles Commission Monog. 14. (New York: John Wiley. 1953. Pp. xix, 323. $5.50.)

This volume is an offspring of Cowles Commission Monograph 10, *Statistical Inference in Dynamic Economic Models,* a review of which appeared in the March 1952 issue of this journal. Roughly two-thirds of the book is given over to exposition or illustration of some of the more immediately useful results developed in the parent volume, while the remaining third is devoted to advances in the theory of economic models and their quantification. The expository chapters, however, show the benefits of extensive rethinking of concepts and methods of presentation. The introductory chapter by Marschak is his most effective statement to date of the concepts of econometric analysis and the special statistical problems to which they give rise. The exposition by Koopmans and Hood of the large-sample theory of maximum-likelihood estimation in "shock models" is organized around a new scheme of stepwise maximization of the likelihood function. And the concluding chapter by Chernoff and Divinsky, setting out the details, complete with work-sheets, of a variety of procedures for obtaining maximum-likelihood estimates, draws on experience acquired after Monograph 10 was in press. Three other chapters have already enjoyed considerable success as journal articles: The first of these is a paper by Koopmans on the concept and criteria of identifiability of the parameters of economic behavior. The second is Haavelmo's well-known paper exhibiting the limitations of least squares in studying a simple model of the consumption function and presenting an alternative maximum-likelihood approach. The third is Girshick and Haavelmo's demonstration of the use of maximum-likelihood processes in studying the United States market for food. That these papers fit so neatly into the plan of the book attests to the cohesion of a well-defined school with common standards of relevance and a common idiom.

Among the new material is a chapter by Simon setting out conditions which permit an operational definition of causal ordering between economic variables or relations; another by Rubin and Chernoff containing new results in the theory of estimation for so-called "shock" models under quite general

conditions, including nonlinear relationships; and two chapters, by Allen and Bronfenbrenner, showing the kinds of bias that can arise from incorrect specification of the relations in a two-equation economic model.

From this brief outline it is clear that, for one who has read and understood Monograph 10, this new book is important less for general results than for explicit findings on biases or concrete details of computing routines. But for the many who have found Monograph 10 too formidable for direct assault, it may well provide the means of access to the citadel. The level of exposition has been greatly simplified by taking certain theorems for granted that were proved in the parent work, and by developing the principal concepts of the theory with more reliance on concrete illustration. This is true even of Simon's article on causal ordering, which despite its formal apparatus of definitions and theorems is essentially an elementary analysis. The chapters on the theory of estimation make the severest demands on the reader, but even here the pace is fairly leisurely and the most difficult theorems are introduced with enough discussion to make their content and relevance clear without formal proof. Finally, there is a wealth of minor details in which the authors have profited from criticism to clear up obscure points in the parent work, and to bring out interrelations of theory that were only implicit in the original exposition. For a great many readers the present monograph will stand by itself; for others it will make the step to Monograph 10 easier; and even for experts it has a valid place beside the parent work, both for expository elegance and for new or more explicit developments not to be found in the earlier exposition.

Since this branch of econometrics is now an established field, there may be those who are interested in this expository effort as a textbook for a course in the subject. At the present time, it is probably reasonable to assume that such a course will not be a first course either in economic theory or in statistics, and that students taking it will have some familiarity with the concepts and symbols of linear algebra. For such a course the book may well be an excellent text. There is more, however, to a well-rounded course in econometrics than appears in this book. An important part of the task of econometrics is the reformulation of economic theories as measurable hypotheses and the elucidation of their quantitative implications. The principles which govern this task are rather assumed than developed in the present volume, though there are concrete illustrations of empirically oriented theories in several chapters. On the statistical side, a considerable branch of theory is concerned with the error-in-variables problem, which arises in models that are completely deterministic when cast in terms of "true" variables, but encounter statistical variability in the data of observation because of errors of measurement. It is a nice question how realistic this model is, but the statistical theory itself is of value in approaching the frontier problem of systems of relationships subject to both shocks and measurement errors. A skilled teacher, however, should be able to make good these deficiencies and to step down the argument of the later chapters to a level more like that of the first part of the volume. Such a teacher may be better served by this book than one who insists on an "easier"

level of exposition. Where true understanding is the object, there is no substitute for clarity of expression, and particularly is this so in the exposition of new and difficult ideas.

MILLARD HASTAY

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On the Theory of Economic Policy. By JAN TINBERGEN. (Amsterdam: North-Holland Publishing Co. 1952. Pp. i, 78.)

In this volume, the first of what appears to be a very interesting series, Contributions to Economic Analysis, Professor Tinbergen studies the determination of government economic policy as a quantitative, theoretical problem. Tinbergen, already famous for his econometric analysis, particularly in the field of business cycles, has been head of the Central Planning Office of the Netherlands since the war, and has therefore had important and highly successful experience in combining rigorous theorizing and extensive statistical analysis into a powerful tool for economic planning.

The formulation of the planning problem is based on Frisch's concept of "decision models."[1] For quantitative planning, all economic variables may be divided into four categories: (1) *data, i.e.,* variables which are exogenous to the economic system of the nation, such as foreign demand variables or extraeconomic factors; (2) *target variables,* the variables which determine the social welfare, such as employment, real national income, or distributional variables; (3) *instruments,* those variables which can be controlled by the state, such as tax rates or government expenditures; and (4) *irrelevant variables,* which include all variables which help describe the state of the economic system but which are not included in any of the preceding categories, such as prices.

From traditional economic theory and econometric analysis we may derive a system of *structural relations* among the variables. If the system is complete, we expect to have as many relations as are necessary to determine the target and irrelevant variables in terms of the instruments and data. The system may then be solved in this way, so that, in particular, the target variables are expressed in terms of the instruments and data. If we had an explicit function expressing social welfare in terms of the target variables, we would indirectly have social welfare as a function of the instruments and data; taking the values of the data as given, we could then choose the instruments so as to maximize social welfare, and the problem of policy would then be solved.

In practice, instead of setting up the social welfare function explicitly, it is proposed to fix values for the target variables, *i.e.,* establish certain aims of policy like full employment and a desirable level of real wages. It is desired to choose the value of the instruments so as to satisfy the structural equations with the given values of the targets substituted and the values of the data for given years.

[1] R. Frisch, *A Memorandum on Price-Wage-Tax-Subsidy Policies as Instruments in Maintaining Optimal Employment,* U. N. Document, E/CN.1/Sub 2/ 13, April, 1949.

The equations are usually assumed linear. Three cases then present themselves:

1. The number of targets equals the number of instruments. Since the system of structural equations is complete, there must be as many equations as there are irrelevant variables plus target variables. The target variables (and data) are given, and we wish to solve the equations for the instruments and irrelevant variables. In this case, apart from special circumstances, there will be precisely one solution for the instruments.

2. The number of targets is less than the number of instruments. In this case there is a choice of instruments, or, alternatively, one can add more targets or raise some of those now given.

3. The number of targets exceeds the number of instruments. In general, the targets cannot be attained, without altering the formulation of the problem. Either lower-priority targets must be dropped, or additional instruments must be introduced. Tinbergen here feels that there are good grounds for a fairly complex governmental policy, such as a multiplicity of taxes.

An important complication in the analysis is the presence of *boundary conditions*. These arise partly because the relations assumed linear are really nonlinear, and one does not wish to make use of a linear approximation beyond a certain neighborhood of the starting point, and partly because the instruments cannot usually be in fact varied beyond certain limits for political reasons. If the solution to the problem, ignoring boundary conditions, does not in fact satisfy them, some of the structural relations must be replaced by the corresponding boundary conditions, or some of the targets may have to be dropped.

Tinbergen concludes by considering a range of special problems, such as measurement of the effectiveness and reliability of instruments, solution of complicated problems by splitting into stages, a survey of the characteristics of economic policy and of lines for further research, and an indication of the realistic difficulties which intervene between the application of the model and the execution of a policy in fact.

The book is richly illustrated with examples drawn from current Dutch policy, many of considerable interest in their own right. The relative efficacy of devaluation and wage policy for meeting balance-of-payments difficulties, for example, is studied in a context which permits a complete discussion of ramifications throughout the economy, including, for example, the distribution of income between workers and entrepreneurs. The cases studied indicate clearly the importance of a general-equilibrium model as a basis of economic policy, instead of the *ad hoc* improvisation which has characterized the economic planning of many other countries. While one would be bold indeed to claim for econometrics the relative success of the Norwegian and Dutch economies in the postwar period, perhaps some high credit should be given to such pioneers as Tinbergen.

KENNETH J. ARROW

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Economic Systems; Planning and Reform; Cooperation

Nationalization in Practice: The British Coal Industry. By WILLIAM WARREN HAYNES. (Boston: Division of Research, Harvard Business School. 1953. Pp. xviii, 413. $4.00.)

With much the same curiosity that brings many foreigners to America to study the TVA, a considerable number of foreign students have visited Great Britain since 1947 to study coal nationalization. Some half-dozen Americans who have gone to take a look at Britain's postwar socialism have returned to publish something about coal; indeed, in nontechnical fields, more research findings have appeared on this side of the Atlantic than in Britain itself (there, the Acton Society Trust's concise pamphlets are most deserving of note). With the exception of Gerhard Ditz's unpublished work on joint consultation, American students have undertaken extensive rather than intensive research—*i.e.*, research which leads to general descriptions and progress-reports for non-specialist readers rather than detailed analyses of specific problems which might be of help to administrators and managers within the industry itself. Such general reports are useful for distant audiences, and Professor Haynes' study is the first book-length appraisal, from either side of the Atlantic, of the industry's progress during the first five years of public ownership. It is a thorough and competent study which no student of British coal, or of nationalization, can afford to leave unread.

Any understanding of this ancient industry must rest on a rather extensive amount of background information. Haynes covers this material (perhaps even more thoroughly than he need have done) in five preliminary chapters that set the stage for his discussion of nationalization. These initial chapters cover the industry's location, its historical development, the mounting problems that led to nationalization, the political controversy surrounding that event, and the elements of mine organization.

The remaining thirteen chapters all have to do with some aspect of nationalization. Haynes is chiefly concerned with the administrative aspects of public ownership (*i.e.*, with management above the pit level). He leads into this subject with separate chapters on the nationalization statute, on the transition problems presented by the "take-over" on January 1, 1947, and a summary of the industry's performance with respect to output, consumption, manpower, labor productivity, absenteeism, strikes, etc. Chapters 9 to 11 address themselves to three labor problems that have directly affected the administrative process: the miners' response to nationalization, the effect of nationalization on collective bargaining, and the limited contribution so far made by joint consultation. There then follow what I found to be the book's four best chapters: the Coal Board's relation to Parliament; the internal organization of the National Board itself; the relationships between the divisional, area, and pit organizations; and the politically important issue of "decentralization" (which Haynes feels, rightly I believe, to be a red herring). Chapters 16 to 18 compare the Board's price policy with the precepts of economic theory, describe its marketing arrangements and its announced investment strategy

through 1965, and review the Board's over-all performance and major unsolved problems.

The author is certainly right in insisting, as many Labour Party leaders have come to realize, that while there are undoubtedly some problems that do take on a special form by virtue of nationalization, most of the critical ones are common to both private and public industry. The dominance of these problems that are independent of the form of ownership explains why "nationalization is not the Utopia the socialists have been seeking nor . . . the destructive revolutionary force the conservatives fear." On balance, however, Haynes feels that coal nationalization has done more good than harm—itself a mixed and cautious judgment, as most of his are.

With respect to the improvement of the administrative process, Haynes sees little to hope for from the politically oriented structural changes which the Conservative Party and press have urged (but have so far refrained from instituting). He argues instead that improvement will come only when people stop debating principles and get down to the study of specific problems. "The case method of instruction . . . might well be the soundest basis on which improvement in Coal Board administration could be achieved" (p. 339). Though Haynes says nothing about the direction future research ought to take, I would agree with his implication that students would do best to plan intensive research on fairly specific problems (or broadly framed investigations within narrow geographical regions).

The great merit of Haynes' book is that he has provided nonspecialists with an over-all view of the machinery and performance of nationalization during its early years. If his treatment of many problems lacks depth, this is because he chose to say a little about a lot rather than more about less. His style is simple, direct, and unambiguous, though he occasionally pursues the pros and cons of an argument with a literalness some readers may find mechanical. Substantively, he has covered a vast topic with sensible selectivity, though I wish he had said something about two subjects he neglects entirely —the organization of research, and the future supply of managerial talent. These are examples of the more intensive studies with which future researchers should concern themselves—but not until they have first read Haynes' book.

The volume contains a good bibliography and index.

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National Income and Social Accounting

Colonial Social Accounting. By Phyllis Deane. National Institute of Economic and Social Research Econ. and Soc. Study XI. (Cambridge: University Press. 1952. Pp. xi, 347.)

The British colonies of Nyasaland and Northern Rhodesia and the dominion of Southern Rhodesia are involved in the dual process of political and economic change that is going on in many parts of Africa and Asia. Neither aspect of change is particularly violent at the moment in these territories, comparatively

speaking, but outside forces ranging from efforts to develop new mineral resources and transport lines to the radiations of the civil conflict in the Union of South Africa are about to increase its intensity. Besides these new forces there are tensions in the colonial economy of the area which, having evolved over the years, may now accelerate the process of change, and perhaps give it a violent turn.

The National Institute of Economic and Social Research in London has made an effort to bring modern economic research and measurement to bear on the life of two of these territories, Northern Rhodesia and Nyasaland, presumably to help define their economic structure and recent evolution. In the hands of Phyllis Deane this effort has been carried out competently and with as much success as could be expected. The assignment was a difficult one. Northern Rhodesia, and to a lesser extent Nyasaland, exemplify the extreme diversity of institutions, habits and motivations that mark the economies of many underdeveloped areas. At the one extreme there is a modern foreign-controlled sector, with mining as its main business. It is engaged in a monetary economy, international trade, production for profit; and it draws white people into the area for more or less extended stretches of time, ultimately followed by retirement in England. At the other extreme is the native African economy, rural, largely nonmonetary, producing for family and village use or reciprocal giving and receiving. Between the two, in an institutional though not necessarily geographic sense, is the sector of African wage labor, consisting of Africans absenting themselves from their villages for extended periods of wage work in the territories or in the Union of South Africa and returning to live, work and spend their money with their families. (As many as 60 per cent of the adult males of one province were found to be away on this business at one time.) Above the three, finally, is the territorial government which taxes the corporations, planters and natives and finances and administers a framework hoped to be suitable to the requirements of the whole.

To establish the social accounts for such a society, valid not only for the small white sector but for the whole population in which the whites constitute little more than 2 per cent, obviously poses problems of measurement of infinitely greater difficulty than are found in this country or in Britain. It is an understatement to speak of a lack of data. The trouble is that market economy encompasses a relatively small sector only. Where would national income calculation in the United States be if the bulk of our livelihood were produced and distributed within families! The art of measurement itself would probably be a matter of family preference. "It was found, for example," reports Miss Deane from Africa, "that it was of little value to question the villager on the yield of the agricultural crops from his land. Even if the quantity consumed straight off the field were treated as negligible—and it is never so— it is impossible to interpret answers measured in terms of sledges full or baskets full or distances up the wall of the granary when none of these units is standard, even for a single village." Add to that, that "a man with six wives constituted six households," that "young men are often more or less indefinitely attached to several households," that "children sleep in their mother's house

one day and in their grandmother's another . . . and eat where they are 'called,' " and you will appreciate the courage of this statistician who went out to collect household budget data in central Africa.

That Miss Deane nevertheless prepared and published figures on income and consumption for these societies, is testimony to her painstaking and intelligent labor. I suppose the statistics are good in the sense that no better ones are available, an evaluation that many a statistician working in an underdeveloped country may have found himself compelled to make, with a mixed feeling of comfort and dismay. Miss Deane frankly recognizes that "this experiment in national income measurement for colonial territories has had a very limited success." She offers her results with due modesty. At the same time she claims, and probably on good grounds, that the experience was educational from a methodological point of view. And she offers some advice to those who want to continue her work.

What the figures show may be of interest to students of colonial economics and economic development. In the case of Northern Rhodesia, for example, her estimate of residents' income in 1945 runs to £18.5 million, that of territorial income to £22 million. The part of these sums constituting income of Africans and non-Africans other than whites is the same, £10.6 million (more than half of it earned in subsistence economy and barter). The difference between the figures results mainly from the inclusion of the transferred earnings of the European companies in the second figure, their exclusion from the first. Government revenue transferred to Britain, on the other hand, is included in the first figure, excluded from the second. The "foreign sector" makes an important difference between the magnitudes measured by the two concepts. In both territories the share of the Africans in either measure of national income rose significantly from 1938 to 1945, but subsequently, particularly in Northern Rhodesia, it showed a tendency to revert to the 1938 level.

Since the 1930's the number of Europeans has increased at a high rate in both territories and so has the number of Asians. This has, however, not changed the racial composition of the territories' population in any significant way. Each is more than 95 per cent African.

The study contains interesting observations of a qualitative nature. Investment in mining, and other "European-type" enterprises is financed by the companies, that in railroad construction by the governments. (Northern Rhodesia recently got an International Bank loan for this purpose.) But the non-African community invest their savings largely in their countries of origin and the Africans, especially those living in the rural areas, save little. Miss Deane concludes "that the future economic progress of the colony depends primarily on the adequacy of the resources at the disposal of government and on the effectiveness with which it uses them."

But what is the impact of government on economic development in the area? Miss Deane observes that a ten-year development plan of the colonial government of Northern Rhodesia, although originally designed with an emphasis on the development of the rural areas, has reverted largely to the development of the railway belt, leaving large rural areas a backwater. The author ques-

tions the adequacy and apportionment of government funds; but she does not consider the more formidable problem of how the Africans and the non-Africans could come to an understanding on the substance and form of economic progress. Such an understanding would seem to be required if a reasonable approach of government, good for ten years and more, were to be found.

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New York, N.Y.

Business Fluctuations; Prices

Die Konjunkturschwankungen. By WALTER ADOLF JOHR. (Zurich: Polygraphischer Verlag, for the Handels-Hochschule, St. Gallen. Tübingen: J. C. B. Mohr [Paul Siebeck]. 1952. Pp. xvi, 675. DM. 36, br. fr. 37.45, lw. fr. 41.20.)

The present volume is literally Volume II of the author's *Theoretical Principles of Political Economy* but is nonetheless a self-contained and comprehensive textbook on the theory of business fluctuations.

The book is divided into three parts and a conclusion. Part I deals with the description and character of business fluctuations, the problem of causation and methodology—empirical and theoretical. Part II treats classification and analysis of cycle theories together with the presentation of a simplified model, which in Part III is elaborated by introducing realistic assumptions modifying and transforming the model into one bearing some resemblance to actual conditions. The final chapter brings to a head the author's psychological and sociological predilections. In this chapter he has attempted to explain the basic cyclical processes by means of the many-sided psychological influences such as uncertainties, anticipation, production to order, mistakes in calculation and the "herd" mind.

The author makes a distinction between impulses and structural factors. The former, *e.g.*, technological, climatic, monetary, political controls, merely modify the more basic structural or "hard core" forces or processes which constitute the substance of his simplified model. His psychological explanation is an effective antidote to the present-day overemphasis on mechanistic theories.

One feature of the book which American authors rarely imitate but which the reviewer finds useful and constructive is the list of references appearing at the beginning of each chapter and even some chapter-sections—references drawn upon by the author in writing his own text. This device is not designed to document the text (footnote citations abound) but it serves rather to inform the reader of the most germane contributions made by a wide and careful selection of authorities.

The significance of this volume to the American student seems to the reviewer to be less the author's own contribution to cycle theory than his thorough and comprehensive classification and review of what others have done to advance our understanding of the character and causes of economic fluc-

tuations. Almost four 3-column pages are devoted in the Appendix to an authors' index; the subject-matter index fills 8½ pages. As might be expected, the author leans most heavily upon Continental authorities but the influence of British writers is very strong and a surprisingly liberal representation of American authors is found throughout. The treatment is current, with only enough historical background to provide the setting for present agreements and controversies; and it is up-to-date, embodying material most recently appearing in the scientific journals and not yet incorporated in books. The author apologizes in the Foreword for not having been able to include a few of the recent (1951-52) contributions which reached him too late.

If a translation of this book were available, it would make an excellent textbook for a semester course in business cycles conducted for students who have had principles of economics with perhaps some additional work in static or dynamic theory. There is nothing like this book in the English language.

James Washington Bell

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Income Stabilization for a Developing Democracy. Edited by Max F. Millikan. (New Haven: Yale University Press. 1953. Pp. xxi, 730. $5.00.)

Some treatises on the stabilization of income and employment can properly be charged with construing the problem too narrowly. In effect, they advocate "full employment at whatever cost," pay inadequate attention to other economic and social objectives, and deal unsatisfactorily, if at all, with the political and legal implications of the measures that they consider or advocate. No such charge can be levelled against this volume, which is edited by Max F. Millikan and written by eight economists, four political scientists, and three lawyers. In fact, its major value derives from its broad scope. Its central thesis is that income stabilization is but one of the many important economic problems to be solved simultaneously within the framework of our social and political values, traditions, and institutions.

The three chapters in Part I of the book provide a framework for the later analysis. Two of these are written by Max Millikan, one presenting the essentials of national income analysis and the other considering the principal objectives of economic policy in a democracy. In the latter, Millikan discusses such things as the social values underlying policy decisions, the meanings of minimum unemployment and ideal employment, consumer-guided allocation, an optimum rate of saving, and optimum income distribution. Francis Coker's chapter deals with the relevance of American political traditions to income stabilization problems.

Part II describes and analyzes the various instruments of policy. Everett Hagen considers the rôle of economic forecasting, describing several forecasting methods and analyzing their usefulness. In a long chapter, Gerhard Colm discusses fiscal policy and the federal budget, tracing out the development of the idea that fiscal policy should be used for stabilization purposes, the evolution of the federal budget, the implementation of fiscal policy through budgetary procedures, conflicts of objectives, some of the principal legislative and

administrative problems, and the scope and limits of fiscal policy. Carl Shoup analyzes the rôle of taxation in fiscal policy, indicating the various types of tax measures that might be used and their relationships to other economic and social objectives as well as to income stabilization. Albert Hart's chapter on monetary policy evaluates its rôle in a stabilization program and examines several proposals for altering the structure of the monetary system and the instruments at the disposal of the monetary authorities. A joint chapter by Robert Dahl and Charles Lindblom deals with variations in public expenditures and several problems related to their control. Ralph Brown Jr. writes on techniques for influencing private investment, covering government loans and loan guarantees, the use of taxes to encourage stability of private investment, subsidies to private investment during recessions, and regulatory control of public utility investment.

Part Three discusses correlative goals. Eugene Rostow's long chapter on market organization and stabilization policy considers both the effects of market structures on the behavior of income, employment, and prices, and some of the relationships between stabilization measures and the maintenance of effectively competitive markets. Charles Lindblom's chapter on labor policy, full employment, and inflation deals with the extent of union power, the limits on this power, and proposed solutions to the wage problem. Paul Samuelson discusses the relationship between the objective of full employment and other economic goals, such as economic progress, labor mobility, labor morale, good management, investment incentives, national security, efficiency in the use of resources, and an optimum rate of saving.

Part Four, written by political scientists and lawyers, analyzes the political processes relevant to stabilization. In describing the political framework for stabilization policy, Victor Jones discusses such topics as the political basis of economic policy, the rôle of pressure groups, reorganization and coordination in the legislative and executive branches, the rôle of political parties, judicial review, federalism, and separation of powers. Harold Lasswell's chapter on stabilization techniques and patterns of expectation ranges over a wide field. Its central interests, however, are processes of communication, public opinion and public attitudes, and expectations relevant to stabilization problems and programs. Thomas Emerson describes and analyzes some of the principal problems of administering stabilization programs. The final chapter, written by Robert Lenhart, reports various views concerning the contents of this volume that were expressed by participants in a roundtable discussion held in late 1950.

The reader will find in this volume very little that is not already known to specialists in the various fields that are covered. It contains no new empirical data and no new contributions to economic theory. Political scientists and lawyers would probably say the same for their fields. Nevertheless, it is a valuable addition to the literature on economic stabilization. It is a good example of what may be accomplished through interdisciplinary cooperation. It brings together and makes easily available in one place many types of materials that were previously widely scattered. In general, the individual

chapters are well conceived, clearly reasoned, and attractively presented. Thanks to the efforts of the editor and to several years of interdisciplinary seminars at Yale, the volume has far more unity than usually results from multiple authorship. Some duplications and gaps remain, but they are within the limits of tolerance.

This book should be highly useful in both upperclass and graduate courses dealing with stabilization problems and policies, and to professional economists who are interested primarily in policy aspects rather than in the more advanced theory of national income behavior and stabilization.

In view of the wide scope of the book as it now stands, one should not complain too bitterly at the editor's decision to leave out treatments of defense expenditures, the relevance of agricultural policies, and the international aspects of stabilization.

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Money and Banking; Short-Term Credit; Consumer Finance

Chartered Banking in Canada. By A. B. JAMIESON. (Toronto: Ryerson Press. 1953. Pp. x, 394. $5.00.)

This book was designed to serve as a text in the Fellow's Course sponsored by the Canadian Bankers' Association at Queen's University. It is therefore a practical book in one of the better senses of the word. The author is a retired officer of the Royal Bank of Canada, and his volume benefits from his own long experience and from that of the friends and coworkers upon whose specialized knowledge he was able to draw.

The first half of the work is devoted to the historical development of Canadian banking, of which far too little is known in the United States. In many ways their history parallels ours, but since Canada seems to have avoided most of the worst faults of the United States banking system, the differences may be more important than the similarities. It is true that the first bank charters in Lower Canada, granted in 1822, were modeled closely upon that of the First Bank of the United States which had been modeled upon that of the Bank of England. But when Confederation made necessary a change in banking legislation, a number of changes were made in the basic law—changes which were inspired in part by the fact that there had been two serious bank failures in 1866 and 1867.

The Bank Act of 1871, framed and adopted after lengthy hearings before a joint committee of Parliament, was a general incorporation law for banks, which extended all existing charters for ten years, and laid down minimum requirements for new banks. One of the most significant features of this Act was the provision that it should come up automatically for renewal every ten years, thus facilitating revision. The Act has been frequently amended and gradually expanded, so that from the original 77 sections it had grown to 165 sections by the 1944 version. Another feature of the Act which has had very fortunate results for the banking system, when measured by United States experience, was the absolute prohibition of bank loans on real estate.

What the Bank Act did not contain is perhaps even more important. There was for example nothing in it which could be construed as a prohibition of branches, and the Canadian system has therefore developed harmoniously, until today it consists of ten large banks with nearly 4000 offices which provide excellent facilities for the entire country and seem to be nearly failure-proof. Another interesting omission from the Act was any requirement for reserves against deposits. Canadian bankers are of course very conscious of their reserves, and watch their ratios carefully, but they were for many years free of any legal compulsion as to the kind or amount of reserves. Nor were they subject to any outside audit or examination before 1924, and even since that year the Inspector General of Banks conducts examinations which seem to be less detailed and less stringent than those in the United States.

Although the Canadian system was functioning in quite a satisfactory way by comparison with other systems, there was considerable popular demand for a central bank. The popular enthusiasm was not shared by the Canadian chartered banks, but they took part in the hearings before the Royal Commission which preceded the passage of the enabling Act. The new central bank began operations in 1935 as a privately owned institution, and was similar in many respects to a Federal Reserve Bank in the United States. It held the newly required reserves (five per cent of deposits) for the chartered banks, and carried on open market operations primarily in government securities. A year later the Bank of Canada became partially owned by the government, and in 1938 all its shares were taken over by the government. There was little immediate effect upon its operations from this change in its ownership, but Treasury financing of the war may have been facilitated.

The second half of the volume under review turns its attention from the chronological development of banking to the techniques of day-today operations. Although this will be of less interest to many, it provides nevertheless a sound basis for understanding the functioning of the financial system. The fact that commercial banks in Canada are prohibited from making loans on real estate, and that they are encouraged to underestimate their assets in order to create "inner reserves," are of prime importance in interpreting published reports.

The book as a whole contains little of theory, and little explicit discussion of banking policy. Many readers will wish for more evaluation of operations of the Bank of Canada, for example. But the careful reader will find here much which can be used in drawing his own conclusions, and a solid basis of fact which is the only safe foundation for theory and policy.

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Business Finance; Investments and Security Markets; Insurance

Business Finance Handbook. Edited by LILLIAN DORIS. (New York: Prentice-Hall. 1953. Pp. vii, 919. $7.50.)

This handbook is intended to provide detailed instructions to business managers in handling "financial problems that arise in the day-to-day administra-

tion of a business" (p. iii). In comparison with the ***Financial Handbook*** edited by Jules Bogen (New York, 1949) it emphasizes working capital management and treats only lightly the broad areas of money and security markets. Whereas the ***Financial Handbook*** has been written largely by those in the academic profession, most of the contributors to this volume are businessmen.

After some description of budgetary procedures the various sources of short-term funds are discussed, though trade credit is given only a few pages. The chapters that follow on managing current assets deal mainly with procedures or "paper work." Consideration is then given to management of fixed assets and administration of business profits. Chapters on forecasting and planning for growth are followed by a section on long-term financing. The book then moves to problems and methods of buying a business, reviving a declining business, and protecting a business against mortality and legal hazards.

As can be seen from this brief outline, the definition of business finance used is very broad. The handbook does cover the area customarily termed business finance, though the space devoted to budgetary procedures seems comparatively slight. In addition, it is almost a general business handbook, treating such diverse matters as credit and collections; maintenance principles and practices; selection of site, building, and layout; why and how to buy a business; and key man insurance.

A book by 22 writers must surmount considerable problems. Although the writing is generally lucid, the content is of uneven quality. The chapters on replacement of fixed assets and administration of business profits are well worth reading, and any business executive anticipating expansion should study carefully the chapter on planning for growth. Most of the other chapters provide quite competent descriptions of the procedures and techniques considered. On the negative side, the first chapter presents a method of estimating working capital needs which, among other lapses, seems to ignore the fact that depreciation is a noncash expense and so equates marginal net profit rate with net cash inflow from sales. The chapters which were evidently written by the editor are occasionally disturbing. For example, the statement (p. 319) that net worth ". . . is merely the liquidation value . . ." would be difficult to support. Inaccuracies have crept into the discussion of conversion of senior obligations, and the matter of forced conversion is omitted.

A second problem of a multi-author book is that of repetition and conflict. Though there are but minor cases of conflict, there are some cases of almost direct repetition and instances where discussions of the same topic are found in different chapters. For example, commercial banks and commercial finance companies are discussed as sources of funds to some extent in three chapters.

There remains the problem of the usefulness of the handbook to financial managers. Much of the information given could be very helpful, particularly that in the chapters on obtaining short-term funds and raising new capital. Nevertheless, much of the material is largely out of one man's experience or a description of how problems are handled in *his* firm. More a recital of procedures than of the principles behind the procedures, the handbook should

considerably benefit the man who is able to fit, let us say, the particular budgetary methods given to his own business. However, in this chapter, "No attempt has been made to discuss the pros and cons of alternate methods, or to discuss the theory behind the procedures discussed" (p. 71). Without the principles behind the procedures, it may be difficult for others to apply the techniques laid forth.

Finally, the reviewer would urge that any future handbook contain an annotated bibliography of additional source material—in spite of claims on the jacket that the handbook provides "the *full, explicit* answer to ANY question. . . ."

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Investment Timing: The Formula Plan Approach. By C. SIDNEY COTTLE and W. TATE WHITMAN. (New York: McGraw-Hill. 1953. Pp. vii, 200. $5.00.)

This book is an exposition and empirical testing of the major types of formula timing plans. The objective of such plans is to protect an investment portfolio against some of the losses in value and to preserve some of the gains in value accompanying general changes in security prices. As a means of achieving this objective, the fund is divided into aggressive (mainly stocks) and defensive (mainly bonds) portions and these are altered with changes in security prices by purchases and sales in accordance with certain rules. It is assumed that fluctuations in stock prices follow a fairly stable cyclical pattern and that therefore such rules of action may be developed by reference to historical market behavior. The central part of the book is devoted to a discussion of constant-ratio and variable-ratio type plans. A chapter is devoted each to constant dollar plans and dollar averaging. In the case of each particular plan, an empirical test of its performance in terms of yield and capital appreciation over the period 1926-1950 is made. The work concludes with a few remarks on the selection and initiation of a formula plan. An appendix outlines ten well-known plans.

Under the constant-ratio plans, a given stock-bond ratio is maintained by security transfers as the value of the equity portion changes with stock prices. Using the yield and capital appreciation criteria, the authors found that the three different fund ratios tested for the period 1926-1950 ranked in the following order: 65/35, 50/50, 35/65. The authors favor a 50/50 ratio, however, if only safety of principal and capital gain are to be considered. Tests of inaugurating a fund at different market levels show the crucial importance of not starting at too high a level. Nevertheless, funds initiated in 1926, 1930, 1935, and 1937 all showed some capital gains by 1950. These results were accounted for by the upward secular trend in stock prices over the period. It is also shown that a 50/50 ratio plan would have given improved performance with a three-month waiting period.

Variable-ratio plans make the stock-bond ratio a decreasing function of stock prices. In the norm type, security transactions are not undertaken until

the "normal" level of the market is attained while in the nonnorm type they are continuously undertaken. Thus in the former a different schedule applies to a rising than to a declining market. The attempts of the authors to find a satisfactory method of determining the normal market level simply show the arbitrariness of the use of moving averages, mathematically fitted trends, etc., for this purpose. Many economists are likely to lose faith in formula timing plans at this point. Of the norm-type variable ratio plans based on earnings, dividends, and book values, the one related to earnings gave the best performance in terms of both yield and capital gains over the period 1926-1950.

The most valuable portion of this book is the comparative empirical tests of the performance of various plans over the period 1926-1950. These warrant careful study by those interested in formula timing. To place institutional investors on their guard as to the limitations of such formula plans when applied to the future, the authors should have discussed the possible impact on future market behavior of monetary and fiscal policies, as well as other changes that have occurred in the past twenty years. Moreover, the optimum plan can be chosen only in terms of the representative investor's preferences with respect to portfolio value and yield as well as their variances over time and, like other works in the field, this one fails to provide such an analysis. The optimal rules of action, *i.e.*, the stock-bond ratio schedule and the action points, cannot be specified until this is done and until the expected cyclical pattern has been agreed upon.[1]

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Public Finance

Effects of Taxation: Investments by Individuals. By J. KEITH BUTTERS, LAWRENCE E. THOMPSON and LYNN L. BOLLINGER. (Boston: Harvard University Graduate School of Business Administration, Division of Research. 1953. Pp. xxxiv, 533. $6.25.)

The conclusions stated in this book refute, in large measure, the popular view that high individual income taxes of recent years have had serious repressive effects on the capacity and willingness of private investors to supply equity capital for business. The authors do not contend that taxes have had no retarding influence on saving and investing activities of individuals, but they show that current opinions relating to the damaging consequences of high taxes on investment in equities tend to be exaggerated. A vast amount of statistical material, carefully assembled and interpreted, supports the conclusions. This volume is a welcome addition to the literature dealing with the effects of steeply progressive personal income taxes.

This is the seventh and final monograph in the Harvard Graduate School

[1] See J. Fred Weston, "Some Theoretical Aspects of Formula Timing Plans," *Jour. Bus. Univ. Chicago,* Oct. 1949, XXII, 249-70, for a discussion of the implicit forecasting underlying formula timing plans and a suggestion as to alternative strategies that might be adopted to attain given objectives.

of Business Administration recent series of studies treating the effects of taxation on business. The writers have aimed specifically "to obtain a reliable empirical foundation for judgments concerning the effects of taxation on the investment capacity and policies of individuals" (p. xi). The factual information, which establishes "a basis for at least tentative empirical generalizations on investor behavior and the effects of taxes thereon" (p. 10), was acquired principally from interviews with 746 individual investors in the top five per cent of the income and wealth groups. Particular attention was focused on the behavior of those in the top one per cent. Supplementary data were provided by the Survey Research Center of the University of Michigan. It is contended that business depends chiefly on a small percentage of the population in high income and wealth brackets for its supply of outside equity capital, which means that investment decisions of a relatively few individuals assume considerable importance.

Most of the data for this study were assembled in 1949. The relevance of these data to 1952 conditions, however, is given some attention in the book. Tax legislation since 1949 is reviewed, and possible changes in investor attitudes are considered. It is concluded that "the increased savings of individuals and the favorable revision of investor expectations, stimulated by the increased tempo of business activity and the resumption of inflationary price rises since 1949, have been sufficiently powerful to overbalance the adverse effects of the increased severity of the tax structure between 1949 and 1952" (p. 62). Thus the conclusions based on 1949 data are thought to be generally applicable to 1952 conditions.

The material of this book is organized and presented in an effective manner. Following a brief introduction, major conclusions are stated in summary form in Chapter 2. The next chapter is devoted to policy implications. The remaining fourteen chapters contain statistical data which, with interpretations, provide the basis for the conclusions summarized earlier in the treatise. The bulk of the book is in the nature of a detailed and comprehensive analysis of the effects of taxes on capacity and policies of individual investors. A long appendix on methodology and a reproduction of the interview form used for the investor sample complete the volume.

In the sections dealing in detail with investment capacity of individuals in the high income and wealth groups, it is shown that the tax structure over the past two decades has resulted in some reduction in ability to invest, but that this reduction is much less pronounced than commonly thought. Funds remaining in the hands of individuals in top income brackets after payment of taxes continue to be greater in amount than generally supposed. The authors believe that their analysis "effectively disproves the flat allegation that the existing tax structure has practically precluded individuals with large incomes from saving" (p. 143). The amount of equity capital which investors are able to supply business has not decreased appreciably as a result of taxes.

More attention is directed in this study to the effects of taxes on investment policies of individuals, as they relate to equities, than to the ability of indi-

viduals to invest. The conclusion is reached that 1949 taxes "exerted a repressive effect on the willingness of individual investors to hold equity-type investments, but that for all individuals as a whole this effect was not very pronounced" (p. 179). Taxes have decreased only slightly the willingness of wealthy investors to own marketable common stock. Admittedly, new issues have not been very attractive to investors, but it is believed that nontax factors have been chiefly responsible for the lack of interest in these securities. With respect to completely new ventures, it is shown that taxes operate both to increase and to decrease the willingness of investors to support untested enterprises, and that the probable over-all effect of taxes is to cause individuals to invest even a larger portion of their funds in new ventures.

The tax structure over a period of many years has provided some inducement for those in high income and wealth groups to purchase tax-exempt securities, but prior to 1949, "tax exemption accorded state and local securities had not diverted a substantial fraction of the total assets or annual accumulations of funds of wealthy investors away from equity investments" (p. 298). This study states, however, that higher tax rates after 1949 have resulted in an increase in holdings of tax-exempt bonds, and that presumably the increase is largely held by top-bracket individuals. Continued high tax rates will likely strengthen the appeal of tax-exempt securities.

Additional significant conclusions reached in this study are as follows: (1) wealthy investors have not gone on an investment strike because of high taxes, and their liquid assets seem, in fact, to be "surprisingly low in relation to their other assets" (p. 315); (2) taxes have caused investors to increase their holdings in life insurance and annuities, but the shift in this direction on the part of top income individuals has been moderate in recent years; (3) the capital gains tax has affected the timing of investment transactions, but tax influences have not served as "a dominant or major explanation of savings in the security markets" (p. 349); (4) it seems unlikely, on balance, that "tax-induced transfers of property by outright gifts have a pronounced effect on the aggregate investment policies of individuals" (p. 372); and (5) there is still a high degree of concentration of marketable stock within the top wealth and income groups, which fact indicates that a large proportion of the funds of these individuals continues to flow into equity-type investments.

It is evident from this study that the tax structure has not significantly reduced either the capacity or willingness of wealthy individuals to place funds in equities, a conclusion contrary to popular opinion. The investigators have done a thorough research job, however, and their results, founded on careful analysis, are not likely to be seriously questioned.

The authors of this book are aware that the results of their study would likely have been different if depression, rather than prosperity, had characterized the economy at the time of their investigations. In the chapter on policy implications, they write that "the repressive aspects of the existing tax structure have undoubtedly been much less potent than they would be in, say, a time of business depression" (p. 62). This is a perfectly safe conclusion to draw, but it seems quite unlikely that tax rates at existing levels would be

employed in a depression. Attitudes and actions of investors would not be the same in depression as they were found to be in 1949, but neither would the revenue system, as a factor influencing investors, be the same.

The book in its entirety is a splendid contribution to the works on the effects of taxation. It helps to fill a gap of long standing in tax literature.

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Das Budget. Vol. I, *Die Budgetkontrolle;* Vol. II, *Das Budgetwesen;* Vol. III, "Table of Contents, Subject and Name Index." By KURT HEINIG. (Tübingen: J. C. B. Mohr, Paul Siebeck. 1948-1951. Pp. 586; 491; —.)

The national budget gives to those who know how to read it, a deep insight into a country's social, political and economic position. The fiscal figures and their changes may reveal indeed the course of world history (J. Schumpeter).

To discuss this relationship in more detail, to examine the budget and its history with all its ramifications in the light of the changing social and economic background, would appear to be a very worth-while, though difficult, task. If Dr. Heinig attempted to write such a book, it must be stated with regret that he did not succeed. His work abounds with stories of events more or less loosely connected with estimates of accounts of income and expenditure. But the report of the facts is anecdotic rather than organized, and it is not systematically coordinated with the exposition of the budget.

The first volume of the book has the title *Budgetkontrolle* (Control of the Budget). The subject of the second volume is according to the author, *Budgetwesen* (Budget System). I do not understand why budget control is distinguished as something basically different from budget system. As a matter of fact, in Volume I the author discusses extensively such questions as the drafting of the budget and the financial accounts. Are these subjects not part and parcel of the budget system? Conversely, such important problems of German constitutional law as the *Budgetrecht* of the legislative body (whether or not it has the right to reject the budget and to force the government's resignation) are not examined in the first volume, but in the second.

The second volume is subdivided into four main chapters entitled *Jährlichkeit* (The Principle of Annual Budgets), *Vorherigkeit* (The Principle of Establishing the Budget in Advance), *Vollständigkeit* (Completeness), and *Klarheit* (Clearness).

This classification is unfortunate. Logically, the examination of an institutional setup, that is of an aggregate of empirical facts, cannot be made by dividing the subject of the study according to some principles concerning proper government procedure. There are many problems of the budget which have nothing to do with those principles. Consequently, they are either not examined at all by the author or they are thrown together with completely different subjects, a confusion which cannot fail to disturb the reader.

The classification according to traditional budgetary principles may well account for the fact that Heinig devotes only a few sentences of his lengthy work to the examination of the extremely important budget problem, how to

make a fairly accurate estimate of future tax revenues. The *Konjunktur-Zyklus-Budget* (the budget comprising a full business cycle) is discussed somewhat more adequately, although, in my opinion, in a rather aphoristic way.

So far this review has not been favorable. I want to emphasize that there is a brighter side. Heinig has taken great pains in accumulating material and although this material has not been worked up systematically, the accumulation itself deserves praise. A host of interesting facts are brought to light and sarcastic observations by earlier writers and by the author himself, especially in connection with financial abuses, make the reading of the book occasionally stimulating and amusing. In this respect I would like to mention particularly the exposition of the control mechanism and of the changes it underwent in totalitarian countries.

As a reference book, also regarding special literature, Heinig's book will be very useful.

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International Economics

Economic Survey of Europe Since the War. By the United Nations Economic Commission for Europe. (New York: Columbia University Press. 1953. Pp. xii, 385. $3.50.)

Europe—The Way Ahead. (Paris: Organization for European Economic Cooperation. 1952. Pp. 358.)

The two studies reviewed here, which constitute the 1952 annual economic surveys of the Economic Commission for Europe and the Organization for European Economic Cooperation, are more ambitious in scope and coverage than any of their respective predecessors. The ECE report surveys developments in the European economy during the postwar period as a whole—rather than merely during the current year alone—and it appraises future problems and prospects in detail. The OEEC report, while not focusing to the same degree on past developments, directs more attention than heretofore to the problems ahead. In each case, the occasion for a stock-taking of the past and a probing of the future seems to have been provided by the fact that the year 1952 may be said in a real sense to have marked the end of the period of postwar dislocations and readjustments and the beginning of a new phase in international economic relations. Since both studies cover broadly similar ground, they inevitably invite comparison as to respective approaches, levels of analysis, and nature of conclusions.

Each report analyzes an exceedingly wide range of problems that bear not only upon European economic affairs but upon the world economy as a whole. Each is documented by a mass of statistical and factual data. There are lengthy treatments in each case of the trade and payments problems of Western Europe, especially vis-à-vis the dollar area; the problems of European pro-

duction in its various major sectors; internal financial developments; distribution of resources; labor and migration; and other matters. The ECE report also has long sections on European integration and on the problems of Eastern Europe; the latter, while handled interestingly, cannot be discussed here.

Economists will unquestionably find the ECE study by far the more interesting of the two in view of the more penetrating level of its analysis, the wider range of its vision, and the more provocative character of its conclusions. In considerable part, no doubt, these differences reflect the fact that, whereas the ECE report is mainly the independent expression of the views of the research staff of that organization, the OEEC report required the full agreement of the representatives of the various participating governments. This helps to explain the cautious wording of the latter study, its tendency at times to indulge in platitudes and generalities, and its obvious effort to avoid offending national sensibilities, including those of the United States to which, in the final analysis, the report is mainly directed. The ECE study, on the other hand, has no such inhibitions against taking a stand on more controversial matters.

Some interesting differences in the general orientation of the two reports are also apparent. Most evident is the fact that the ECE study lays far more stress than the OEEC study on the *structural* character of many of Europe's external and internal problems, and correspondingly less emphasis on the potential efficacy of the price mechanism and of monetary-fiscal policies as means of helping to solve them. Although the ECE report is undeniably less enthusiastic than its predecessor reports with regard to the merits of government planning and direct controls, there is still evidence of a *dirigiste* slant and of a questioning of the ability of market forces to yield satisfactory solutions to the problems at hand. Although admitting that postwar planning by direct controls in Western Europe generally failed in its purpose, the report explains that failure, in part at least, by exceptional circumstances; and the suggestion is left that the possibility of successful planning in predominantly free-enterprise economies should not be completely ruled out. In contrast to all this, the OEEC report strongly emphasizes the importance of facilitating the working of the price mechanism and stresses the rôle of general monetary-fiscal methods in maintaining internal financial stability.

The central theme of the two reports is the failure of Western Europe, despite its remarkable internal recovery since 1945 and the very considerable improvement in its external position, to achieve a solution of its dollar payments problem and to restore a system of nondiscriminatory trade and convertible currencies. Emphasis is also placed on a second and related major problem facing Western Europe, namely that of lifting its over-all levels of production from the position of relative stagnation prevailing since the end of 1951. Both reports agree that these two problems will not solve themselves automatically and that an aggressive program of action, involving the cooperation of the United States, is called for if Western Europe is to achieve dollar balance within the framework of multilateral world trade and a satisfactory rate of economic expansion.

Both reports argue, along familiar ground, that the solution of Western

Europe's dollar problem must primarily depend upon increased exports to the dollar area and to third countries from which dollars can be captured; a reduction in the dependence upon dollar sources for food and raw materials by an increase in primary production in Western Europe and other nondollar areas; a displacement of American exports of manufactured goods in Western Europe and its affiliated overseas areas; or any combination of these. The ECE report, in emphasizing the structural character of the dollar problem, urges the need for "an integrated and consistent programme" and for "basic adjustments," especially in the field of stimulating primary production in nondollar areas (in connection with which, among other things, it somewhat vaguely suggests long-term purchase contracts, guaranteed prices, and commodity stabilization). It also recommends "more conscious control" over the flow of capital from Western Europe to its affiliated overseas areas. But, in terms of positive programs, the ECE's main prescriptions at bottom come very close to those of the OEEC, namely, liberalization of United States commercial policies, stimulation of American private and public foreign investment, increased European productivity and competitiveness, export promotion, etc. The OEEC, as noted above, also stresses the need for policies of internal financial stability. Superficially, at least, the OEEC report seems to take a somewhat optimistic view of the possibilities of such measures being undertaken and yielding satisfactory results; but the ECE report, probing more deeply below the surface, is undeniably pessimistic and seemingly resigned to the prospect of continued discrimination by Western Europe against the dollar area.

The ECE report penetratingly analyzes at great length many of the internal structural problems of Western Europe and points to the great difficulties in the way of effecting the shifts in resources required to solve those problems. On the other hand, these matters are treated only sketchily and on a more general plane of discourse by the OEEC. Particular emphasis is laid in the former report on the problem of rural pauperism and overpopulation in Southern Europe and on the widening gap between the income levels of these countries and those of the more developed countries in the rest of Western Europe. Given the obstacles to intra-European, and especially overseas, migration (also explicitly recognized by the OEEC), this problem can be solved in the long run, according to the ECE, only by the large-scale industrialization of Southern Europe. As one step in this direction, the report, in contrast to the popular view that intra-European trade barriers should be removed, argues for tariff protection by this region against imports of industrial products.

Whereas the OEEC report merely refers enthusiastically to the desirability of pushing Western European integration as a means of stimulating productivity, the ECE points rather to the many obstacles in the way of further progress towards the establishment of a common market in Western Europe. This it does on the basis of a searching examination of the various sectors in which greater integration might be effected and of the various policies needed. Its conclusions here again are gloomy; and it suggests, in fact, that the current emphasis on integration might be running the risk of "diverting attention from

the great readjustments needed in the broader pattern of world production and trade."

Whether or not one fully concurs in the ECE's pessimistic portrayal of Western Europe's economic problems—especially in the light of the over-all progress that has been made since the report was written—there will be few who will finish the report without a much greater awareness than before of the magnitude and complexity of the task that lies ahead.

No short review such as this can do anything remotely approaching justice to the wealth and scope of these two documents. They, and especially the ECE report, should be "essential reading" for all students of international economic affairs in general and of the economic problems of Western Europe in particular.

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Europe and the United States in the World Economy. By ROBERT MARJOLIN. (Durham: Duke University Press. 1953. Pp. xiv, 105. $2.00.)

Up to a certain point, the secretary-general of the Organization for European Economic Cooperation sets out a careful and balanced position in this series of five lectures given at Duke University in the autumn of 1951. The point of view is European, and the accent on stability peculiarly French. ("I am convinced that the instability of values is at the present time the greatest threat to our democratic way of life," p. 31.) While it contains little new information, insights or hypotheses, for most of the way it makes an effective contribution to the literature on European recovery through its rounded and judicious presentation of a familiar story.

The first four lectures deal with the background of the Marshall Plan; the impact of the Korean crisis and the rearmament program to which it gave rise; the problems of European integration apart from payments; and the problem of internal European payments. On all of these Marjolin is informative as to facts and sensible in his judgments. Some may take issue with the preference for stable exchange rates, which is derived from his predilection for stability; but his opposition to inflation and over-valuation, and his support for more freedom and more competition put him clearly on the side of the angels.

The final lecture, which bears the title of the book, may not, however, win universal agreement. In it, Marjolin touches upon the separate responsibilities of the United States and Europe, and their joint rôle in speeding the development of other areas. None of this is particularly debatable. In the course of this, however, he develops an analysis of the asymmetrical relations economically between the United States and Europe which is not likely to be fully accepted.

Income disturbances are likely to arise in the United States, rather than in Europe, because of the high and volatile level of investment in the former and low and sluggish level in the latter. More, these income disturbances will produce deficits in the balance of payments of Europe, no matter in which direc-

tion they go. If the United States goes into depression, this sets back European exports and produces deficit in this more straightforward fashion. If the United States inflates, this raises world prices, gives Europe adverse terms of trade, induces a price spiral and leads to runaway imports. The proof lies in the experience of 1949 and 1950.

If this be all true, Marjolin owes the reader more of an explanation. Why do not falling prices for imports help Europe during depression, or rising exports in prosperity? As one who has detected more asymmetries in world trade than most, this reviewer is sympathetic to unorthodox explanations but cannot go along with Marjolin on the present evidence or without further analysis.

But to raise these questions is to emphasize the point that the last chapter contains some provocative passages, which add a pleasant fillip to the useful exposition of the earlier lectures. However belated, since university presses are notoriously slow and international civil servants hard pressed for time to edit and read proof, the publication of these lectures is most welcome.

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Foreign Commerce. By Harold J. Heck. (New York: McGraw-Hill. 1953. Pp. xii, 512. $6.50.)

This book is designed to serve as a text for courses both in foreign trade and in international economics, "if the latter is taught with emphasis on or purposeful consideration of private business aspects" (Preface, p. vii). In the opinion of this reviewer it accomplishes the former purpose much more satisfactorily than it does the latter.

Part I is introductory and includes a graphic description of U. S. and world trade, past and present. Part II describes the organization, practices and procedures of foreign commerce. Consistent with his statement that "the study of foreign commerce rests on the standard business disciplines of marketing, transportation, finance, insurance, business law, accounting and statistics" (p. 5), the author presents this material in such a way that the student who is already familiar with these fields in general business administration should readily perceive the unique aspects of trade across national boundaries. Others will find the exposition clear and simple. This part also contains an excellent descriptive chapter on governmental agencies concerned with foreign commerce. Part III deals with such theoretical matters as the basis of trade, adjustments in the balance of payments, exchange rates, and price levels. This is the least satisfactory section of the book. No unified, cohesive body of theory is developed. Instead, the student is exposed briefly to numerous important concepts and propositions which can have little significance or meaning to him because they are neither explained nor related to each other adequately. A useful (descriptive) chapter on foreign investment is included in this section. Part IV is devoted to policy questions, most of which concern restrictions on imports and exports. The treatment is largely descriptive. Part V contains a good, detailed account of postwar international economic organizations and agreements.

One incidental virtue of the book is that the reader can obtain an extensive list of sources of international economic information from its pages. Nearly every chapter contains several references to, and brief comment on, the chief sources of data. Another virtue is that, while Heck uses a great deal of statistical material, he frequently cautions the reader about the practical difficulties of compiling the figures and the consequent chances for error in their use.

On the whole this book employs a somewhat broader approach than most texts on the practical or business aspects of foreign trade, but the aim of integrating the practical and theoretical aspects of international economics is not achieved. The book should prove useful as a text for courses in foreign trade, and as a reference book for persons entering the profession of foreign commerce. The student of international economics would also benefit from reading certain chapters, especially in Parts I, II, and V.

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Business Administration

The Theory of Inventory Management. By Thomson M. Whitin. (Princeton: Princeton University Press. 1953. Pp. viii, 245. $4.50.)

This is a brief survey of inventory control procedures and their effects on the theory of the firm, on the business cycle, and on their adaptability to the national military establishment. First, Whitin examines some simple inventory control methods in terms of their probabilities of providing adequate safety allowances. Interdependence among order intervals, size of orders, delivery times, safety allowances, rates of sales, and size of inventories are also explored with simple models. All of the discussion is based on nonstyle types of goods (except for a brief section on a simple model of the style goods case) for which optimum inventory sizes, calculated in a probability model using the Poisson distribution of sales, vary with the square root of the rate of sales. Whitin indicates that this implied inverse ratio of inventories to sales agrees better with observable data than the assumption of a constant or increasing ratio.[1]

Whitin also surveys briefly some business cycle models based on inventory behavior and reveals a host of popular but contradictory hypotheses about the ratio of inventories to sales, about restocking principles, and about stabilizing effects of inventories. Inventory implications and inadequacies of the static Leontief model, the dynamic von Neumann model and the Air Force programming models are also indicated. Some reasons why these models should not be applied are advanced. The final third of the book explains why it is so difficult to apply inventory control methods in the national military establishment and how some of these difficulties may conceivably be overcome. A major obstacle to good military inventory management is the absence of a value criterion. Whitin illustrates how game theory provides, in principle, a basis for

[1] The first half of the book has been succinctly presented by Whitin in "Inventory Control in Theory and Practice," *Quart. Jour. Econ.*, Nov. 1952, LXVI, 502-21.

obtaining these values. The book concludes by touching briefly on the consistency between individual inventory optimization and an optimum based on the total of costs over all firms. An excellent bibliography is provided.

The level of penetration and applicability of results suffer, perhaps because of the extensive scope of the book. Whitin is honest in stating that his study is an attempt to clarify problems of inventory control; and he is hopeful that clarification may lead to improved inventory control procedures. Although he does not establish these improved techniques, he does indicate elements necessary for some improvements. Repeated emphasis is made to the effect that the oversimplified examples possess some realistic elements and may (might?) lead to improvements. This is commendable and justified caution. If one were to judge the empirical usefulness of the suggestions by the realism of the assumptions in his inventory models, as Whitin does when evaluating the models of Leontief and von Neumann, the verdict would be unfavorable. Fortunately for Whitin's work, this is an inadmissible procedure; the validity or usefulness of a theory is judged on the basis of its empirical performance and the generality of its predictive validity. As Whitin himself states, the book is valuable only to the extent that its analysis contributes to a better understanding of the problems in inventory control and thus may help to discover improved and applicable procedures.

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Theory of Markets and Marketing. By Henry H. Bakken. (Madison, Wis.: Mimir Publishers. 1953. Pp. xi, 362.)

The term "theory" in connection with marketing has in recent years been used to entitle a heterogeneity of types of writings ranging from narrow intellectual probings to sweeping conceptual structures. Sound theoretical treatises on marketing, on the other hand, have not always carried the word theory in their title. A reader could have no safe preconceptions, therefore, as to what might be found between the covers of Bakken's book.

What he has given us is a personally patterned picture of markets and of factors at work in them. It is a personal picture because Bakken, as a student of marketing and economics, has a unique knowledge of facts which might distinguish him also as an historian. He is a specialist in agricultural marketing. And he is more than casually conversant with the history of economic thought. These different facets of knowledge are brought to a focus in this book.

The resulting work is difficult to classify. As an economic treatise it reviews doctrines of classical and neoclassical economists relative to the laws and concepts of markets. It presents an analysis of the institutional influences upon markets—such institutions as freedom, private property, rights of trade, freedom to contract, power to create and extinguish debt, and opportunity to make recourse to law and justice. The student of institutional economics may find new use of these concepts made and fresh interpretation given through an historical viewpoint.

As a work on marketing it is even more difficult to characterize, for it is substantially atypical of usual writings on marketing and is conceptually at variance with traditional marketing thought. The ideological differences which Bakken expounds presumably underlie the structure of his institutional analysis of the market, particularly of commodity markets and futures trading. Unfortunately the advantage of his exceptional usage of concepts and words is not made apparent, for apart from submitting the intellectual exegesis of which the book consists he does not carry the concepts through to any particular conclusion. In the end the book is not finished, it is merely terminated.

He has said: "The author's intention in this book is to present in broad outlines a general theory of the evolution of market institutions, their structure, purposes, functions, and inherent characteristics. His objective is sought in what may be considered an unorthodox manner by calling into play a combination of disciplines such as economic history, law, and institutional economics" (p. viii).

The reader may question either the intellectual or the practical effect of some of his heterodoxy. For example, he defines marketing as "the act of creating possession utility" (p. 9), thus making the creation of time and place utility part of production. He sees marketing as "intermittent phenomena which accentuates the movement of goods and services giving them direction as they flow toward points of ultimate use" (p. 13).

"Retailing under this concept combines two functions—production and marketing—but is heavily weighted on the side of production by creating place, form, and time utilities preliminary to sales" (p. 14). He regards brokers, commission agents, and speculators as "agencies which approach in purest form the singular function of marketing" (p. 17). He regards advertising as "more closely related to production than to marketing because it has much to do with the handling and shaping of materials" (p. 18).

Isolation of such phrases cannot but do an injustice to them. At best, however, they indicate the variance between Bakken's concepts and those which have been increasingly adopted by students of marketing during the last twenty years.

While the book may find no adoption as a marketing text and may make little impression upon marketing theorists, portions of it may be profitably read for its institutional economic analysis. And the chapters on primitive and tribal trade, pagan commerce, and medieval fairs are perhaps the best writing on these subjects to appear in many years.

Robert Bartels

Ohio State University

Industrial Organization; Public Regulation of Business

The Age Structure of the Corporate System. By William Leonard Crum. (Berkeley and Los Angeles: University of California Press. 1953. Pp. xii, 181. $3.50.)

Theorists, in spite of the suspicions of practitioners to the contrary, con-

tinuously bemoan the absence of facts. Economists, certainly, are as acutely conscious of the need to know "what happens" as those in other disciplines and, within the field of economics, probably nowhere has there been a keener awareness of the dearth of data than with respect to the characteristics of business enterprises. Most of the work done in the past has had to rely on samples of the business population, a procedure fraught with many dangers. While there still exists no comprehensive set of vital statistics of corporations, to say nothing of business enterprise as a whole, an important contribution has been made by the publication by the U. S. Treasury, in 1950 and 1951, of *Statistics of Income for 1945* and *Statistics of Income for 1946.*

Crum has been able to give us data on the age distribution of active corporations because the statistics of income for 1945 provided, for the first time, for the reporting of the date of incorporation. Unfortunately, we still do not know how long each corporation has operated as a business unit, since many corporations took out charters after long periods under some other business form. Nevertheless, the data are a distinct improvement over what we have had.

Most of Crum's book concerns itself with the relationships between the age structure of corporations and (1) size; (2) type of industry; and (3) profitability. (1) With respect to size, we find that the young corporations are predominantly small. In 1946, corporations chartered since 1930 were 68.4 per cent of the total in terms of number but they held only 19.9 per cent of the total assets. Also in 1946, corporations which had been chartered both recently and in remote years were predominantly small, but corporations chartered in earlier years (back to 1890) were more likely to be large, *i.e.*, the predominance of small corporations decreases the older the age class. Older corporations have had more years in which to grow. (2) The date-of-incorporation statistics are analyzed for each of 85 lines of industry. The Manufacturing division, for example, has a somewhat older age structure than the Trade division: quartile ages of 2, 11, and 23 compared with 2, 9, and 18. (3) Young corporations are more liable to suffer deficits than older corporations and the age structure of corporations showing a deficit is younger than that of corporations showing a profit. Crum recognizes that many of his conclusions are what everyone has suspected. This, however, does not reduce their value; one should not be satisfied with a suspicion that something is true.

Crum has performed competently his prodigious task of molding the data to give us some important answers on the age distribution of corporations. He does not go on from there to conjecture why relationships are what they are. For this he can not be criticized, since he explicitly excuses himself from this task: "Some comments are ventured upon possible economic implications or explanations of some of the more striking statistical results, but no attempt at a systematic economic interpretation of the results is made" (p. 53). Rather Crum has described in great detail the data with which he has worked and the steps he used to formulate his tables. This was done so "that the later work of other investigators may thereby be facilitated" (p. ix).

Since Crum has not grappled with the problem of the relevance of his

data for private and public policy, a reviewer is limited to such matters as an evaluation of the organization and manner of presentation of the material. Valuable as will be the procedural details to future research workers, many will wish that the major conclusions, with some of the principal qualifications, had been presented in a summary chapter, or as summary sections at the ends of the chapters. Only a small percentage of those interested in the conclusions can be expected to be interested also in the procedures, and one must wade through a good deal of the latter to glean the former. Even so, this is a relatively minor criticism of a job well done.

MARSHALL D. KETCHUM

The University of Chicago

The Role of Mergers in the Growth of Large Firms. By J. FRED WESTON. (University of California Press. 1953. Pp. xvi, 159. $3.50.)

I read Professor Weston's book with little prior knowledge of the subject with which it deals. Indeed, I came to this book with much less familiarity with the literature and the facts of mergers in the United States than is possessed by many of my readers. None the less, I have no hesitation in recommending his book; for it is clearly a book of high quality.

Weston examines the part played by mergers in shaping the structure of industry in the United States. His particular concern is to discover how far mergers have been important in bringing about conditions of oligopoly or more accurately, a high degree of concentration of industry. With this in view he studied the dominant firms (there were 74 of them) in 22 industries, chosen because they were characterized by high concentration of production. But the list also includes those industries in which, according to the Federal Trade Commission, merger activity has been significantly great. The heart of the book is an analysis of the growth of these dominant firms, growth being measured by the increase in the value of total assets.

Weston distinguishes between growth through merger, which he terms "external growth," and all other growth, termed "internal growth." This distinction has, of course, nothing to do with whether the funds for financing the growth were provided from internal or external sources. He first examines the part played by mergers in determing the absolute size of the firms. This section of the book, which presents a careful statistical analysis of the material he has gathered, yields conclusions which carry conviction, notwithstanding the defects of some of the basic data. His main conclusion is as follows: "Acquisitions have been a negligible portion of the total growth of most of the firms in census industries now characterized by a high degree of concentration of output."

He next turns to the relation between mergers and industrial concentration. His conclusion is very interesting and is best given in his own words: "The merger movement at the turn of the century resulted in a high degree of concentration in a large number of industries. Subsequently, great growth took place in these industries, but the dominant firms of 1900-1905 did not grow relatively faster than the rest of the industry. Hence the present levels of

industrial concentration reflect to a considerable extent the high degree of concentration resulting from the early merger movements. Although the *absolute* size of present-day oligopolists is due only in small part to either earlier or later acquisitions, the *relative* position of these firms is accounted for mainly by the merger movement at the turn of the century."

With this chapter we leave Weston's substantial original contribution. The next topic he considers, the recent merger movement, is essentially an appraisal of the studies made by the Federal Trade Commission and by Butters, Lintner and Cary. This leads Weston to broad agreement with the view of Butters, Lintner and Cary that the recent merger movement has not had a significant effect on industrial concentration.

I found the last two chapters, on the economic theory of mergers and the implications of the findings for public policy, the least satisfactory parts of the book, probably because Weston is mainly reviewing other people's work. Plausible arguments have been brought forward to support widely differing conclusions. But it is a discussion which can only be settled by greater information. What we need are more Westons. However, modesty is a laudable virtue and we can hardly reprove Weston for not having reached this conclusion.

RONALD H. COASE

University of Buffalo

Government's Role in Economic Life. By GEORGE A. STEINER. (New York: McGraw-Hill. 1953. Pp. ix, 440. $6.00.)

This is a well-organized, well-written and well-documented attempt to explain why the federal government has come to play such an enormous rôle in the functioning of the American economy. Its central theme is to demonstrate conclusively (in case there are still any doubters) that an expanding government has arisen from the interplay of economic, social, political and military forces in a way both natural and inevitable. It is not an attempt to develop a unified or consistent theory of government control but it is a substantial contribution to the growing body of research which may some day produce an acceptable theoretical explanation for the amount of governmental activity in our economy. The value of this book lies not in its originality of thought but in its careful organization and classification of the best thinking of many outstanding economists, sociologists, historians and political scientists in so far as they have been concerned with the rôle of government in society.

The first section analyzes the institutional, sociological and economic background for public controls. An exceptionally good integration of economic and political forces leads up to a clear and convincing analysis of the main causes of expanding government controls: (1) the impact of technology on *laissez faire,* (2) demand for government to coordinate resources, (3) demand for government to resolve group conflicts, (4) demand for government to underwrite risks, (5) national scope of economic problems and the growing faith in government to resolve them, (6) the Great Depression, (7) demands of national security, and (8) requirements of world leadership. Two chapters on

"The Role of Government in the Individual Enterprise System" and "Constitutional Economic Powers of Government" are especially strong chapters intended to show that a controlled economy evolved from the doctrines of the classical economists and that the Constitution was intended to facilitate, rather than hinder, this process.

The second section is a two-chapter economic history of the last twenty years which emphasizes the rise of government intervention.

The third section analyzes the economic and administrative problems of our mixed economy. The purpose is to develop principles which can be used to guide our national economic policies. The growing complexity of modern life, together with the expansion of group economic and political power, has led to a preponderance of forces which tend toward disequilibrium. Recognizing that the governement must stabilize the economy against these forces, the author recommends a number of principles for measuring the justification for controls, approaches for controlling pressure groups and some suggestions for raising the level of individual moral responsibility. In an outstanding chapter on pressure politics, it is shown how conflicting group interests lead to regulation. The chapter is rather anticlimactic, however, since an otherwise good case for action is diluted by a conclusion which raises some issues which merely cast doubt on the main theme of the chapter. The obvious conclusion (a positive program against lobbies) is not presented until two chapters later (pp. 401-4).

It is difficult to criticize this book without being trivial. There are some minor confusions, such as one over the definitions of economic and political freedom, which leads to a conclusion that political control and economic freedom can be increased simultaneously (p. 39), although on the next page economic control is found to be inconsistent with political freedom. Presumably freedom is not the opposite of control. This eventually leads to an oversimplification of the goals of economic systems in a statement that democracy tries to maximize political and economic freedom while totalitarianism tries to minimize both (p. 41).

Although the author's opinions creep in, his treatment of controversial issues is objective and he does not fail to mention facts that do little justice to his opinions. For example, he is quite optimistic that "any government must serve the people . . ." and "in the end dictatorial governments must fall" (p. 37), but these opinions are contradicted by his analysis of economic history which leads to a conclusion that "centralized economic authority is more prevalent than decentralized economic decisions in the history of civilizations" (p. 60). He quotes with agreement, but not approval, G. D. H. Cole's lament that "It looks today as if the Victorian epoch of *laissez-faire* were but a brief interlude between two long periods of collective regulation" (p. 61).

At the organizational level, there is a tendency to classify everything. The book abounds with "five relationships" (p. 28), "six assumptions" (p. 71), "eight causes" (Ch. 6), etc. This is, of course, desirable from the standpoint of analysis as well as being a valuable teaching aid, but it leads to weariness when it occurs on nearly every page and sometimes becomes drawn out as, for

instance, when fourteen categories of action supporting public economic programs are presented, some requiring subcategories for adequate explanation (pp. 237-38).

While this book is designed as a textbook, it cannot be considered as a substitute for Fainsod and Gordon, Mund, Dimock or other standard texts since it is concerned mostly with the philosophy and causes of regulation rather than the field of government-business relationships in general. However, it can be expected to be of immense value to all instructors in the field of government-business and to all economists who would like to know something about the American economy beyond what economists alone have said about it. Its greatest value lies in (1) the background it provides for instructors by concise summaries of the best studies in the field and many well-selected quotations from many sources, (2) several strong chapters (mentioned above) which could profitably be assigned as collateral reading to senior or graduate students, and (3) extensive bibliographies. This would be a very useful textbook if it were not for the fact that it does not fit the established pattern of course organization in the field.

WALTER S. BUCKINGHAM, JR.

Georgia Institute of Technology

Price Practices and Price Policies: Selected Writings. Edited by JULES BACKMAN. (New York: Ronald Press. 1953. Pp. xiv, 660. $8.00.)

Professor Backman has assembled some 200 selections concerned with the making of prices of goods and services (excluding labor) in this imperfectly competitive world. His purpose is declared to be to help the businessman in the pricing of his product and the student in understanding the practical problems of price making (p. v). He feels that prices are determined by supply and demand only in a very broad sense and that the assumptions of competitive price theory are seldom found in practice. His point of departure, then, is the theory of imperfect competition; what he hopes to accomplish is to supply the institutional details. "Throughout most of this volume, we will be concerned primarily with the institutional framework of administrative pricing by business and government rather than with price theory" (p. 6). However, the divorce of theory from practice can hardly be as complete as he implies in his early remarks on prices and the price system, and is refuted by his choice of selections.

A vast amount of ground is covered in the selected readings: the determinants of prices and price behavior, nonprice competition, the relationships between costs and prices in the short and the long run and among prices, wages and productivity, geographic price practices, methods of protecting against cost and price changes, the legality of certain pricing practices, and pricing problems in agriculture, manufacturing, retailing, public utilities, insurance, and the professions. Three of the twenty chapters are concerned with government price-fixing in time of war or emergency and the relative advantages and disadvantages of alternative techniques of control.

Some of the selections are descriptive or explanatory; others are analytical. Some contain suggestions or recommendations as well as point up problems. A few are in the form of exhibits, such as an advertisement or excerpt from a code of ethics. Many have been abridged. About seventy per cent of the contributions are by economists, and half of these are by Backman. The contributing economists are, in almost all cases, academic economists of known standing. The remaining thirty per cent of the selections are from business and professional men and their organizations, reports on business, government agencies, the Supreme Court, and economic research groups. Backman provides introductory remarks for each chapter and frequently injects comments of his own either to furnish smooth transition from one point to the next or to present his own views, sometimes with intent to settle a disputed point as he sees it. He also provides an entire chapter on the pricing of insurance.

A virtue in choice of selections is that, in addition to necessary background materials, different points of view are presented. A few of the questions discussed are: How dominant is concentration of control as a factor in making for depression insensitivity of prices? Should prices be lowered in order to achieve lower costs, or do lower prices come as a result of lower costs? Are prices set according to the "full-cost" principle or according to the principles of marginal analysis? Should f.o.b. pricing be required, or not? Is price leadership a sign of monopoly or of active competition? Is real progress being made in the judicial construction of the antitrust laws as they pertain to pricing, or are recent decisions serving only to confuse the businessman and to create an environment of uncertainty? What are the arguments, pro and con, of the fair trade movement? Should a general price ceiling, or some alternative, be the basis of a program of controls in times of an armament program?

Opposing viewpoints do not necessarily match economist against economist; it may be a case of economist versus corporation lawyer or businessman. The reader may feel on occasion that the lawyer is citing materials out of context or that the businessman is stretching his argument, but in these instances there may be a degree of truth in what they say. If these selections are designed to be a study of administrative pricing within its institutional framework, then they deserve to be included and can contribute to fuller comprehension of the forces at work.

Backman has avoided bogging down in a quagmire of institutional detail and has turned out a book of readings of considerable substance. The one "cost" of examining so many pricing practices and policies in the space of 635 pages is condensation. In this case the force of the abridgement is felt in some measure but such objection has been minimized. On balance, the businessman may profit from these readings more because they may give him an objective awareness and better perception of pricing problems as they exist in various sectors of the economy than because he can add another fact or technique to his store of knowledge. The undergraduate should be able to gain in both ways and be stimulated by the argumentative approach. These readings could be utilized to advantage in an undergraduate survey course in

pricing practices and policies or as a source of supplementary readings in particular pricing problems.

MARSHALL C. HOWARD

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The Propensity to Monopolize. By LOUIS J. ZIMMERMAN. Contributions to Economic Analysis, II. (Amsterdam: North Holland Publishing Co. 1952. Pp. 100. $2.00.)

This book, written by a professor in the Netherlands, is the second in a series of "Contributions to Economic Analysis," which is being issued under the editorship of a group headed by Tinbergen. Unfortunately, the book fails to fulfill the expectations engendered by the title of the series and by such auspicious sponsorship.

The principal argument of the book runs as follows: In industries in which competition and monopoly are alternative possibilities, the type of organization likely to evolve depends on objective market conditions, specifically on the ratio of elasticity of supply to elasticity of demand that would obtain in (long-run?) competitive equilibrium. That ratio is called the "propensity to monopolize," on the grounds that its height will indicate the gains from monopolization in terms of both profits and stability. The higher the "propensity to monopolize," the larger will be the percentage spread between monopolistic and competitive profits, and the more pronounced will be the tendency for instability under competition. The threshold between monopoly and competition comes, rather conveniently, with a "propensity" of unity. At that point profits would rise by a third through monopolization, an increase that Zimmerman believes is just adequate "to overcome the frictions that work against a monopolization." That point also separates "neurotic" from "phlegmatic" market conditions.

These propositions are almost wholly void and irrelevant. They apply, with conceivable though improbable exceptions, only to straight-line demand and supply (rather, marginal cost) curves and depend on the slopes, not the elasticities, of the curves. The analysis of "dynamic instability" rests on arbitrary assumptions specifying convenient time lags and fixity of supply and demand while adjustments proceed over a protracted period of time in response to an initial (linear) shift of supply or demand. At no point does Zimmerman come to grips with difficult basic issues, such as the relation of supply to costs, the difference of behavior in short and long runs, the specification of an industry, the definition of monopoly and competition, the operational significance of his analysis, and the like. These questions are by-passed in favor of symbolic manipulation.

The symbols add nothing very useful to an elementary level of analysis. For instance, a full page is devoted to setting forth the mathematical derivation of the relation between price and marginal revenue expressed in terms of demand elasticity, a relation that plays no rôle in succeeding analysis. Statistical estimates of demand and supply elasticities are taken without qualification as accurate measures of the traditional static concepts. The brief discus-

sion of macroeconomics results in a conclusion that the success of monetary policy depends on the interest-elasticities of the demand for and supply of money. The contribution to dynamic analysis is a graphic "economic zodiac" tracing out the presumed relations between the "propensity to monopolize" and the "phlegmatism" or "neuroticism" of markets.

Another annoying feature is the unnecessary display of erudition. Zimmerman parades throughout the book a congeries of economic miscellany, whether relevant to the primary discourse or not. The book's index consists solely of a list of the ninety-seven men who are mentioned in the book, ranging from Aristotle to Zimmerman. As an example of unnecessary citations, the routine formula for elasticity of supply is documented by specific references to works of no fewer than five well-known economists.

The book deserves review because it is a sobering example of modern economics run wild. It portrays the emptiness that can be cloaked in elegant modes of analysis: knowledge without wisdom, form without content, and method without meaning.

G. Warren Nutter

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Public Utilities; Transportation; Communications

British Railways and Economic Recovery. By Kenneth H. Johnston. (London: Clerke & Cockeran Ltd. 1949. Pp. 352. 18 *s*.)

Mr. Johnston's book is fundamentally both an indictment of British railroad performance under private management and ownership and a challenge for the present administration to take advantage of opportunities opened up under nationalization. A substantial case is presented in favor of the socialist approach of regarding utility services, such as transportation, as instruments of welfare policy, rather than as economic entities in their own right. Thus readers in this country perhaps should be forewarned by the author's own statement: "For those who regard transport merely as one industry among many . . . , calling for no higher requirement than that the service should 'pay its way' and be run strictly on commercial lines, the present writer's whole approach . . . will seem wrong." In fact this commercial viewpoint is blamed for the failure to bring about a "true" economy of transport services in terms of the needs of the nation as a whole.

Thus it is suggested that transportation in England be provided along noncommercial lines and thereby achieve objectives such as the following: (1) A decentralization of population and industry eliminating the blight existing in many of Great Britain's industrial centers, (2) the application of special passenger fare relief to underprivileged areas so as to encourage passenger travel for recreational purposes as well as to increase labor mobility, (3) the restoration of geographical advantages to the various communities by charging freight rates to cover only "direct haulage" costs, the rest to be borne by the state, (4) traffic relief, especially in the heavily congested London area and

(5) the use of dead-heading trains during rush-hours (those moving in the opposite direction of the main commuter flow) to take children to schools to be located in outlying areas. Most important, Johnston believes that improved service standards and lower operating costs can and must be achieved through electrification of all main lines as suggested earlier by the Weir Committee in 1933. Railways in Great Britain in comparison with those of other countries—nationalized or not—have lagged behind in almost all categories, such as speed, on-time performance, thermal efficiency of locomotives, and costs per ton-mile. Freight rates are high and passenger fares have risen to levels higher than in any other country, including the United States, and —contrary to the experience of the railroads in this country—it is assumed that the passenger has been a primary source for the subvention of freight traffic which must accommodate industries competing in foreign trade. This was necessary because of a desired rate of return on capital inflated as a result of "redundancy masquerading as competition."

It is pointed out that other advantages of electrification include the greater appeal of electrified service per se which would accelerate the execution of the aforementioned objectives, and a reduction in the need for highway construction, improvement and maintenance and its accompanying conservation of rubber, oil and human lives. In addition Britain's dwindling coal reserves may be stretched as a result of converting to electricity, the production of which would be less demanding on both coal quantity and quality, and which would also make use of by-products. The saving in smoke damage due to steam railroad operations is estimated at £6,000,000 per annum; also a large number of obsolete coal cars, switching operations and facilities could be eliminated. The combination of electrification (including its higher availability and utilization) and the abandonment of duplicate facilities would thus result in substantial reductions in operating cost. The benefits from the consequent rate reductions are said to offset any increases in subsidization if necessary. The experience of the Southern Railway (first British line to engage in major electrifications) and other railroads abroad is used to substantiate these claims. The possibility of diesel operation is dismissed briefly on the ground that this might be practical only on low density lines.

The prewar railroad management is rebuked for its delinquency in bringing about an improved rationalization of the British railway plant. That some of this could have been accomplished even under private operation is shown by pointing to a study by our National Resources Planning Board,[1] upon which the author relies heavily in order to prove his point. The opposition to electrification is attributed to several factors. These include (1) the fear of losing much coal traffic, (2) improvements in steam locomotive design, (3) misgivings about converting steam locomotive shops to electrical work (in England the railway companies usually built their own motive power), (4) the initial cost involved and the resulting increase in the rate base (the author is more sympathetic on this point), (5) certain misunderstandings about the Weir

[1] N.R.P.B. *Transportation and National Policy,* 1942.

report (*e.g.*, with respect to the number of personnel required per electric locomotive), (6) the alleged influence of coal operators in perpetuating the use of outmoded hand-braked coal cars, requiring extra switching operations and severe restrictions on train speeds thereby inflating the consumption of coal, and (7) the prevailing inertia of railroad management. The fact that some of the suggested improvements are not yet under way is explained in part by the existence of "C" license holders (private truckers), who "enjoy a free hand to deplete the railroads of the traffic that would enable them to be run on a sound economic basis." In view of the fact that the British trucking industry has been altogether denationalized since the publication of this book, it is not likely that the policies set forth therein will be applied unless the present government in England receives a political reversal.

For those who believe that in order to maximize public welfare, transportation should rank with national defense, health or education, this book will be stimulating for its straightforwardness and absence of "academic discretion" on a subject which is highly controversial, even in Great Britain. For the majority of readers in this country, however, it should serve as a reminder that there are alternatives to evaluating the performance and purpose of transport services. Unfortunately the book loses some of its vitality because of poor organization with a tendency to be repetitive; several points are needlessly elaborated upon, whereas others such as the methods and costs of producing the needed current are treated somewhat cursorily (*e.g.*, no mention is made of the possibility of hydroelectric power). Nevertheless an informative contribution has been made not only for the student of transport nationalization, but also for anyone concerned with the practical problems of nationalized industry in general.

CHARLES STONIER

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Industry Studies

Stabilizing Construction: The Record and Potential. By MILES L. COLEAN and ROBINSON NEWCOMB. (New York: McGraw-Hill. 1952. Pp. xvii, 340. $6.00.)

Stabilizing Construction is one of the research studies conducted by the Committee for Economic Development. It is somewhat customary to speak of "depression proof industries" in contrast to those which are quite decidedly cyclical. Certainly the building industry belongs to the latter group and is one of the most unstable areas in our modern industrial economy. Furthermore, since it affects so many large and vital groups in our economy, anything which can be done to help stabilize construction will also help to stabilize the economy as a whole.

We are told that building costs are high primarily because the industry is so unstable. Since the industry is so erratic, whether due to the business cycle, wars, changes in weather, or variations in the rate of marriage and family

formation, the hourly rate of wages is abnormally high, and the contractors' margin of profit is exceedingly wide. "Thus, building cost stood in 1950 at a point 296 per cent higher than in 1913, in contrast with a 131 per cent rise in wholesale commodity prices. In other words, building cost rose about 125 per cent more than did the general wholesale price level during the period 1913-1950" (p. 60).

Not only have wage rates gone up, but labor costs have increased for other reasons as well. "In the same period, efficiency apparently dropped" (p. 64). "There has been a trend under union rules toward replacing unskilled labor with skilled labor for the performance of unskilled work" (p. 67). Although technological improvements have reduced costs in certain areas, they have not been sufficient to offset cost increases. "On balance these cost-decreasing factors have not offset the cost-increasing ones. Labor cost in construction has risen more than wages, hourly or annual, of nonbuilding labor; and it now probably requires more man-years of work for the average worker to pay for the labor going into a house than it required in 1925 or 1915" (p. 69).

Responsibility for this reduction in efficiency and increased cost of construction must be shared by labor, contractors, and the government. The authors describe the usual featherbedding tactics and other "make-work" rules of organized labor, familiar to any student in this field. Employers also are guilty because much work is done on the site with hand tools that could be done much faster and cheaper at the mill or shop. Furthermore, during the past decade a very high percentage of construction has been done under "cost plus" contracts, which naturally puts a premium on inefficiency and general incompetence since "the higher the cost, the more the plus."

The authors also show that even the government has contributed its share to high cost construction. Municipalities have formulated unique building codes, licensing laws, and other devices which although normally defended on grounds of safety and protection, are in reality designed to reduce competition and provide areas of monopoly for local contractors, local unions, and sometimes local building materials. The authors state that "taken as a body, the effect of the various types of restrictive practices that have been described has undoubtedly been to prevent erratic movements in the cost of construction and to give some protection both to employers and the labor force in face of variations in demand. This, of course, is what they were intended to do" (p. 124). Yet "they have been more effective in cost maintenance than in employment maintenance; and they certainly have not prevented activity from sinking to disastrous levels. Many of the common restrictive measures do not merely stabilize cost but tend rather to increase them above a level that known techniques and inherent productivity would otherwise permit." They have discouraged technological advancement and thwarted incentives to increase productivity. "As a result, buyers of construction have been hurt by being forced to pay more than need be, while the construction industry itself has suffered from artificially created limitations. . . . As instruments for effectuating true industrial stability, trade restrictions must be classed as failures" (p. 125).

Even granting that some of the causes of instability are man-made and deliberate, some causes at least are by-products of other larger forces and are certainly beyond the ability of those within the industry to stabilize.

The first and major cause in the 20th century has been war. Other forces are floods, rate of urbanization, and population composition. Residential building, of course, is related to the rate of "family formation." And since "the number of women between the ages of twenty and thirty will be seven per cent less in 1955 than in 1950," we cannot expect the rate of family formation and residence construction to be as high in the next few years as has been true of the immediate past. However, there should be a new wave of marriages and residence construction in the 1960's because of the exceptionally high birth rate in the 1940's.

There is a close parallel between their program and that set forth by the "Committee on Stabilization" of The American Economic Association:[1] general fiscal and monetary policies, the contracyclical use of public works, and government regulation of credit. In the field of private action, the authors stress the desirability of freely moving prices. They are against extended use of government price fixing. "In our review of construction activity, no evidence has been found that any artificial stabilization of price by private or public means has resulted in the stability of activity and employment" (p. 154).

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Land Economics; Agricultural Economics; Economic Geography

Research in the Economics of Forestry. Edited by William A. Duerr and Henry J. Vaux. (Washington: Charles Lathrop Pack Forestry Foundation. 1953. Pp. xi, 475. $6.00.)

This is an important book, and one that should be in the possession of anyone interested in the economics of forestry or in natural resource economics in general. It is primarily a reference volume. Modeled after the Scope and Method bulletins of the Social Science Research Council, which dealt with research in agricultural economics, this book outlines a large number of specific research projects in its broad field. A useful companion piece is *Economics of Forestry: a Bibliography for the United States and Canada, 1940-1947,* published by the U. S. Department of Agriculture Library in 1950, which grew, as does the present volume, out of a project financed by the Charles Lathrop Pack Forestry Foundation and was sponsored by the Society of American Foresters.

Economic study of grazing and of forestry has lagged far behind economic study of cultivated crops and domestic livestock. Perhaps for too long we took for granted the supply of these products which nature gave us, not considering how we might augment that supply or put it to better use. As this volume recognizes, research in economics of forestry is roughly 25 years behind research in agricultural economics generally. Preparation and publication of

[1] See *Am. Econ. Rev.*, Sept. 1950, XL, 501-38.

this volume may well help to close that gap. Certainly the field is here divided and the tasks are approached in a manner strongly imitative of methods which have been developed in agricultural economics.

The book is divided into eight chapters. The first is a general survey of the field, with some history, definitions and suggestions about research methodology. The last chapter surveys forest economics research in the United States from 1940 to 1950 inclusive. The other six chapters take up, in turn, the forest economy at large; the agents of production; the management of forests; forest-product harvesting and processing; the meeting of supply and demand; and demand for forest products. Most chapters are divided into a few major sections, within which specific research projects, 127 in all, are outlined in more or less detail. A project typically includes a statement of purpose, definitions, relations to other studies in the general field, data required and sources, analysis of data, and references to other research studies that should be helpful.

The editors sought successfully to draw on the knowledge and talents of a large number of persons of widely different backgrounds. They list three associates; 67 different persons contributed project statements, alone or in partnership; 19 others are listed as advisers to the editors; and the help of 27 others is acknowledged. The editors apparently tried whenever possible to get some specialist to contribute a project statement; failing that, they outlined briefly the other projects they thought necessary to give a reasonably good coverage of the total field. Those listed are drawn partly from economics as a profession, partly from those who gained their training as foresters. Many of them are with academic institutions or federal agencies, but some are with private employers.

For a volume of such numerous authorship, this book is unusually coherent, with a minimum of gaps and contradictions. For this the editors no doubt deserve great praise. The level of professional competence of the separate contributions is also high.

A book on research methodology will not magically make all future research in this field competent, imaginative, incisive, but it can help. The book should be particularly helpful to those conducting or planning to conduct research in this general field, and to those who teach graduate students in this field. As the concluding chapter points out, 75 per cent of all those persons who led research projects in economics of forestry in the eleven years 1940 to 1950 inclusive, undertook only a single research project in this field. "Obviously, research in economics of forestry is being led, not in the main by specialists, but by workers—mainly technical foresters—who enter the field in passing" (p. 457). "The full meat of economic studies can be brought to light only by a thorough comprehension of the complex economic interrelationships which lie behind each problem, and by discerning application of the best methodology which economics can devise. It is doubtful whether persons who engage in only a single economic study over an 11-year period are prepared to furnish the necessary sort of leadership" (p. 457). The book closes with a plea for more well-trained economists, familiar with the technical aspects of

forestry, to conduct research and to train the researchers of the future.

As one lays down this volume, thankful to the editors for their contribution, he cannot help but wish that they, or someone, would write as comprehensive a text or reference book on the economics of forestry as it is possible to write today. In other words, tell us what is now known about the economics of forestry, as well as how to conduct further research. Such a survey and synthesis of existing knowledge would be thoroughly worth-while for itself, and by revealing the gaps in our knowledge might do as much as has even this useful volume to stimulate further research.

MARION CLAWSON

Jerusalem, Israel

Labor

Les salaires. By ROBERT MOSSÉ. (Paris: Lib. Marcel Rivière et Cie. 1952. Pp. 324. 950 fr.)

This volume on wages is the third in a series of economics handbooks prepared under the direction of Robert Mossé, professor of law at the University of Grenoble. The work is divided into three sections: (1) a summary analysis of evolution in economic knowledge about wages between 1900 and 1950, written by Mossé; (2) a compact statistical treatment of wages in France, Italy, Great Britain and the United States, prepared by Raymond Rivet and Raymond Dumas; and (3) an excellent bibliographical section which includes careful annotations of 192 books and articles from a number of countries.

Labor economists will find the bibliographical section of particular value. The summary annotations are well done and the breadth of coverage is remarkable. Several surprising ommissions should not be permitted to detract from an otherwise skillful bibliographical treatment.

Mossé's analysis of evolution in knowledge about wages over the past 50 years is lucid, well-organized and not without humor. In this reviewer's judgment, he has achieved his objective of making the subject intelligible to the layman while retaining sufficient depth in his observations to make the analysis of some interest to the professional economist.

Mossé leaves the reader in no doubt as to his own views. His thinking closely parallels that of Arthur Ross and Clark Kerr whom he quotes frequently with approval. He has little use for the marginalists or the econometricians. He lays great stress on institutional and noneconomic factors in wage determination. His analysis constitutes a strong plea for interdisciplinary study and his writing reflects great breadth of training and experience.

The author believes that the preoccupation of economists with obtaining precise formulas and exact answers has blocked advancement of knowledge in the wage field. His central thesis is that the political factor is dominant but not all-powerful in wage policy decisions. In seeking to raise real wages and improve income distribution, Mossé feels that we make a mistake in battling over whether the better road is through increasing production or raising wages. Why not recognize, Mossé concludes, that one is the right foot and

the other the left and that the important thing is to march together rather than worrying about whether to step off first with the right or left foot?

HAROLD W. DAVEY

Iowa State College

Conciliation in Action. By EDWARDS PETERS. (New London, Conn.: National Foremen's Institute, Inc. 1952. Pp. xx, 266. $4.50.)

This is a good book to guide the practicing conciliator of labor disputes. It contains a wealth of excellent case illustrations which show how to reduce the many difficulties and hazards of this profession, and—perhaps somewhat monotonously—how disputes always seem to be solved inasmuch as the parties involved reach an agreement. The cases are drawn from the author's experience and the files of the California State Conciliation Service. While there is not always a connecting link between the eighteen chapters, the instruction and entertainment of the reader are not neglected.

Two-thirds of the book is taken up with the techniques of conciliation—in connection with that small proportion of collective bargaining contracts where a breakdown of negotiations or the outbreak of a strike is threatened. Theoretically the conciliator does not make recommendations on the issues under dispute, whereas the mediator goes further, counselling on procedures as well as on the issues themselves. But the author holds that the passive role of improving communications and the active role of peacemaker or middleman (taking part in the discussion and making recommendations for the solution of differences) cannot be separated in the attempt to settle a dispute. The ideal conciliator (from the state or federal service) combines utilization of the best of the conciliation techniques with the parties themselves, and the prestige of outsiders, as represented by a citizens' committee. His essential contribution is that of guarding each side against total defeat or certain damage resulting from a strike. In the author's view, the concilator should not enter a dispute until the parties have reached a real deadlock, especially when a major change from expected relationships is contemplated. Solution requires early discovery of the real issues and positions, making both sides aware of them and narrowing down the differences in a skillful game of persuasion, bluff and chance. The conciliator must rely on mutual good faith and must avoid deciding for the parties what he might consider best for them. He can only discover areas of agreement and communicate them so that the parties may negotiate their own agreement. To this task the conciliator should bring experience, objectivity and impartiality.

The results of conciliation appear to be highly satisfactory if the criterion of settlement alone is considered. More than 86 per cent of labor-management negotiations in which disputes were threatened in 1950, were concluded without work stoppage by the California State Conciliation Service (of which the author is a member). Mr. Peters has some shrewd and interesting observations on the publicly stated and actual "breaking points" of the two parties, how to enable them to guess these points approximately and how to reduce the zone of difference. He feels that this is very often a matter of horse-trading in which

timing, sensing of the intangibles, common sense and native wit appear to be of much greater importance than economics, at least within a broad framework. The problem for each side is essentially this: "How can you set a stage which conveys enough certainty to convince your opponent that it (your figure) is genuine and yet leave enough doubt about it so that you can make a graceful exit if your bluff is called?" This is a refreshing reminder in the age of model-builders, but lays the conciliator open to the charge of neglecting consideration of the cost of settlement to the parties and above all to the public. Hazy visions of Kant's *Eternal Peace* seem more important to the author than the economic consequences of conciliation and the need for differences of opinion in democratic society as well as in industry. A chapter on the economics of conciliation in times of declining sales might have revealed different principles and techniques from those outlined by the author. The public interest needs to receive much more consideration. A discussion of the training and background necessary for a successful conciliator would have been interesting; and an analysis of failures would have been valuable; but all this does not detract from a very worth-while and thorough contribution to the art of conciliation.

Ernest Dale

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The Labor Problems of American Society. By Carroll R. Daugherty and John B. Parrish. (Boston: Houghton Mifflin. 1952. Pp. xi, 846. $6.00.)

When Professor Daugherty's *Labor Problems in American Industry* first appeared twenty years ago (revised 1941), the title was most appropriate: the field consisted of a series of barely related problems, scarcely within the scope of economics. It was most refreshing to find detailed and cogent economic arguments frequently woven into the fabric of institutional material. A bevy of postwar textbooks have since appeared, and these have reflected the realization that labor economics is an application of general economic principles, and that the interrelationship between its different aspects should have first priority in its treatment, even though complete integration may still be a stumbling block. However, the present new book (completely rewritten and with Professor Parrish as co-author) has not quite shed the mould of the earlier work.

The basic aim of a labor textbook should be to link institutional descriptions with economic insights (which this volume achieves), while emphasizing a unified approach to its various problems—focusing on *one* central theme throughout. This theme might be the various facets of wage determination; it could revolve around the labor market and employment, and manpower allocation; also, most labor problems could be grouped around collective bargaining and its economic implications, etc. The temptation to cover all facets of all problems in an encyclopedic manner must be resisted. If a textbook fails to avoid this pitfall, differentiation of central points from incidental descriptions is made difficult. Even the distinction between partisan viewpoints and the public interest, so close to the hearts of the authors of this book and so

carefully pursued, is somewhat obscured by encyclopedic coverage at the expense of integration.

The best sections of the book—the completely new central part on unions, employers, and collective bargaining—have eschewed this danger. The focus is on the public interest. The organization by and large is logical; a wealth of ideas is integrated with explanations of basic forces; and recent literature is fully exploited. Internal organization of unions and management has been focused upon, and has been woven into the discussion in a novel way. The approach to economics (here and elsewhere) is to ask for economic causes of an event and trace all possible consequences, taking account of different approaches. This technique, well in evidence in the earlier volume, is useful in teaching the student the application of economic reasoning to particular problems. Even though discussions of theoretical tools, general equilibrium and wage theories are completely absent from this book, wage policies of unions and employers and their function in collective bargaining are well treated, showing a wealth of practical experience though lacking integration with the general wage chapters. A good description of collective bargaining in three industries is useful, but this reviewer would have preferred more emphasis on grievances and their settlement, including arbitration.

The major point at which criticism must be leveled is the organization of the book. Part I (Background) does not seem to presuppose any previous courses. To start with psychology and human relations, followed by the problem of resource allocation and want satisfaction would be a welcome innovation, if the treatment were not so elementary and if it did not fail to focus on subsequent discussions. Part II, containing the bulk of the work, starts with a treatment of a variety of separate fields in the old "problem" approach—nonintegrated. Although not so named, the problems of insecurity, wages, physical risks, old age, etc., can be distinguished. This means that the student must wade through 200 closely printed pages before arriving at the well-integrated sections described earlier. This task is also complicated by many titles, subtitles and subheadings, and the reader often finds it necessary to check under what subheadings a particular side-heading belongs. Analytical tables of contents at the beginning of each chapter (and better printing distinctions) could have eliminated this difficulty. Mechanical division of single topics between different chapters, to keep chapter length comparable, does not aid the clarity of organization.

This is mentioned because the organization—along with the mass of material presented—buries many excellent ideas, cogent economic arguments, good discussions of individual topics. It would be most unwarranted and a great pity if the reader were deterred from finding those parts and sections, particularly as the first quarter does not do justice to the rest of the book. An obvious solution for teaching is to use individual chapters or sections along with a shorter, clearly organized book, possibly one emphasizing economic tools. In this connection it may be suggested that the chapter on employment (Chapter 6) would profit by integration with parts of Chapter 22 (on the prevention of mass unemployment, pp. 628-48). Similarly, the discussion of

Chapter 16 should be distributed over Chapters 14, 19 and 24. Finally, the teaching usefulness of the volume would have been helped if secondary sources and additional source material had been indicated.

The close reasoning of the book, and the objective way in which different sides of each problem are treated is illustrated by the fact that this reviewer is in basic disagreement with the authors in only a few places. *E.g.*, the statement that "ultimate ascendency of pure business unionism came when most workers had resigned themselves to more or less permanent membership in the working class" (p. 254) seems contrary to the facts: business unionism was based on the typically American social mobility as opposed to reform groups of workers who considered themselves permanent members of the "proletariat." Whenever depressions seemed to destroy this social mobility, labor grouped for social reforms and political power. In connection with this point, the discussion of labor and politics (pp. 406 ff.) could be improved: the crucial fact of labor's geographical distribution which makes it impossible to dominate but a few Congressional districts is overlooked, and the reason why no labor party phenomena have appeared is not cogently argued.

The focus throughout the book is on the public interest and this approach highlights the kind of considerations students of social science ought to give to public questions. All viewpoints with regard to a question are judiciously presented—one of the strongest recommendations of the book.

Kirk R. Petshek

Washington, D.C.

Population, Social Welfare and Living Standards

Population Changes in Europe Since 1939. By Gregory (Grzegorz) Frumkin. (New York: Augustus M. Kelley. 1951. Pp. 191. $3.75.)

The demography of disturbance has almost inevitably been a neglected area of research. Wars, revolutions or famines do not lend themselves to close documentation in the best of circumstances and the rapid strides to total warfare during the last conflict have given rise to numerous new statistical difficulties. The present volume joins Huber's pioneering study of the French population during World War I among the very few important attempts in the field. No serious student of recent social or political currents in Europe should overlook it. The demographer has come by a valuable reference work.

Unusual in method of presentation as well as in contents, this book is meant to be studied carefully. A brief introduction on prewar demographic trends is followed by a discussion of the conceptual and statistical difficulties attending the measurement of Europe's wartime population changes. Even the expert will find novel the problems of defining and tracing a population when the usual associations between an area and its inhabitants can no longer be relied on. The heart of the book consists of a series of twenty-four national monographs, pertaining to each of the principal European countries outside the present boundaries of the Soviet Union. A brief discussion is appended on the

Russian experience, the available materials on war losses being cited without evaluation.

The monographs vary greatly in length, depending on individual statistical circumstances, but each centers about the construction of reasonably uniform population "balance sheets" for 1939-45 and again for the early postwar years 1946-47. The balance sheet (really population flows) approach is a surprisingly new technique in demographic analysis; its advantages in the present context—*e.g.*, insurance against inconsistencies in the raw data, internal checks on adjustments, clarification of concepts and their interrelations, greater ease of aggregation and disaggregation—will be immediately familiar to anyone interested in national income accounting.

The concluding chapter will probably be of most interest to the nonspecialist. The individual balance sheets are brought together and consolidated by region and for total non-Russian Europe. On the basis of the consolidated figures, Frumkin has attempted to assess the population "costs" of the war and the remarkable upsurge in numbers during the early postwar years. "The characteristic feature of the impact of the last world war on the population of Europe . . . lies not so much in an all-around reduction in numbers as in the exceptionally large shifts of the population chased across national boundaries, especially in Central and Eastern Europe" (p. 188). Between 1939 and 1945 the population of non-Russian Europe only fell from 380 to 372 millions, even excluding the approximately 5 million prisoners of war who were outside the area in 1945 and were in large part repatriated through 1947. The average birth rate for the area remained surprisingly high and the "normal" death rate remarkably low (p. 180). Natural increase alone in 1946-47, some 6.5 millions, quickly made up most of this deficit. With repatriation of prisoners of war included, the 1939-47 change in total population was positive, from 380 to 383 millions. Many of the 1.6 million prisoners of war outstanding at end-1947 were returned by 1949; contrary to popular conception the author believes the number of prisoners still held by Russia in 1950 was not considerable. He regards the wartime and postwar "ethnical re-shaping of Europe," in the form of a near elimination of national minorities, as "a distinct step towards a new Dark Age."

The record Frumkin provides is a grim reminder of a continent in agony. In non-Russian Europe alone, he estimates, military losses were close to 6 millions, civilian deaths from war causes 5 millions and the toll of the Jewish extermination program over 4 millions. (The Russian experience remains a mystery in these as in other respects, but it may well be that war losses in that country were as high as in the rest of Europe combined.) Perhaps as much as 85 per cent of the 10 million war losses in countries occupied by Germany consisted of nonmilitary deaths. The magnitudes of population shifts were even more enormous. Although Frumkin's estimates greatly understate gross flows, the shifts he does record exceed estimated total war losses by well over 50 per cent. Throughout, Frumkin emphasizes that all of these aggregates, and a large proportion of the component national estimates on which they rest, are subject to wide margins of error.

Frumkin rightly observes that comparisons of censuses before and after the war are likely to be only partial or even unsatisfactory substitutes for a direct approach to Europe's wartime population upheavals. Mass movements of different kinds and in opposite directions may largely offset each other in their effects on intercensal changes. The economic and demographic implications of the postwar sex, age, urban-rural or labor force structure over much of the continent cannot be assessed in ordinary terms, being obscured by the presence of large transient populations. Undoubtedly our understanding of Europe's recent demographic heritage can be greatly fostered by direct examination of the genesis and development of population movements during and just after the conflict. It remains true, however, that many of Frumkin's conclusions, and the inferences to be drawn from them, can best be assessed and enriched by the voluminous materials now available on the postwar populations of Europe. Interestingly, Frumkin himself originally started by attempting a survey of European manpower, with special attention to the effects of the war on sex-age structure. The gaps in the data which persuaded him to abandon that project can now be overcome in good part.

Editor of the League of Nations *Statistical Year-Book* throughout its lifetime, Frumkin has made full use of his unique connections with the statistical offices of Europe to track down data and sources of error that would have eluded a less dedicated or ingenious observer. It would be a great pity if, as now seems likely, the voluminous correspondence and sudsidiary computations underlying this book were lost to subsequent researchers; the reviewer, for one, hopes that these invaluable background materials will be made available for convenient reference.

The definitive work on the demography of World War II, both in Europe as a whole and in each of its major regions, has yet to be done, but Frumkin has provided an indispensable starting point.

GEORGE J. STOLNITZ

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The Economics of National Insurance. By ALAN T. PEACOCK. (London: William Hodge and Company. 1952. Pp. 126. 8*s.*, 6*d.*)

The Economics of National Insurance is a tight little volume that adds up to a forceful assault on the financial *modus operandi* and some of the underlying dogmas of the British social insurance system, as revamped and integrated in the spirit of the Beveridge Report of 1945.

Approaching his subject from a welfare standpoint, Mr. Peacock first looks into "the impact of the existing scheme of national insurance on the British economy." The scheme, he asserts is "not in any way similar to private insurance"; as "a social service, it is primarily a transfer mechanism" (p. 36). Hence, the policies governing the insurance fund reserve, built up from tripartite employer, employee and state contributions should not be judged in accordance with the canons of private insurance but rather in the light of their relation to the inflationary trend of the economy, which is to say, their effect

on the real value of the benefits provided the beneficiaries of the system. Despite frequent benefit rate revision (that is, frequent, as it might seem to one accustomed to our relatively sluggish social security benefit scales), the author does not feel that the British beneficiaries are adequately safeguarded against the inflationary contingency.

Second, Peacock considers the extent to which national insurance fulfills the ultimate objective of redistributing national income. The present system is found to be an unsatisfactory transfer mechanism, characterized by anomalies, anachronisms, and avoidable administrative complications. The indifference curve criterion of welfare argues against food subsidies in lieu of direct purchase of good by the beneficiaries themselves. The practice of requiring an employee contribution is held inconsistent with present-day widespread income tax coverage, and moreover to rest upon the questionable assumption this contribution is needed to ensure employee interest in the system.

Third, Peacock analyzes a number of "reform schemes," which would serve to maximize welfare, minimize inflationary impact and trim administration. These schemes originate in the 1943 Rhys-Williams plan for paying everybody a "social dividend" from funds raised by proportional income taxes. The author would not do away entirely with social insurance benefits, forms and the administrative complexities inherent in benefit certification. His scheme, financed out of income taxes solely, would include, in addition to "personal allowances," supplements for the sick, unemployed, aged and widows.

A statistical comparison of tax burden and benefits under existing and proposed schemes for various family groups at different income levels does not seem to yield very definite conclusions. Although the volume is excellent as a stimulating attempt to weigh social and economic implications of social security finance, and as an independent critique of institutionalized social insurance methodology, it falls short of making out a case for immediate, further drastic revision of the whole structure of British social insurance.

Harry Malisoff

Brooklyn College

TITLES OF NEW BOOKS

Economic Theory; General Economics

ANTOINE, J.-C. *Introduction a l'analyse macro-économique: les origines.* (Paris: Presses Universitaires de France. 1953. Pp. 291. 1.000 fr.)

An examination of the precursors of Keynesian macro-economics, beginning with the mercantilists. The final chapter of the book is on *The General Theory.*

ANTONELLI, G. B. *Sulla teoria matematica della economia politica (1886).* With introduction by G. Demaria and comment by G. Ricci. (Milan: Rodolfo Malfasi. 1952. Pp. 126.)

BAGEHOT, W. *Economic studies.* Edited by R. H. HUTTON. Reproduced from Vol. V of *The Works of Walter Bagehot,* edited by Forest Morgan. (Stanford, Calif.: Academic Reprints. 1953. Pp. 237. $4.)

A collection of essays edited and published after the author's death, and now reprinted. Included are the following: "Postulates of English Political Economy," "The Preliminaries of Political Economy," "The Growth of Capital," "Cost of Production," and separate papers on Adam Smith, Malthus, Ricardo, and J. S. Mill.

DARGENT, E. *Les modèles macroéconomiques de séquence—l'exemple de Lundberg.* (Paris: Lib. Armand Colin. 1953. Pp. ix, 150. 500 fr.)

FOURASTIÉ, J. *La productivité.* (Paris: Presses Univ. de France. 1952. Pp. 118. 150 fr.)

LOMBARDINI, S. *Il monopolio nella teoria economica.* (Milan: Societa Editrice "Vita e Pensiero." Pp. xi, 317.)

PARETO, V.: *Scritti teorici.* Edited by DEMARIA, R. DAG. With an introductory essay by the editor. (Milan: Rodolfo Malfasi. 1952. Pp. xxx, 651.)

PIGOU, A. C. *Alfred Marshall and current thought.* (New York: St. Martin's Press. London: Macmillan & Co., Ltd. 1953. Pp. vii, 85. $1.50.)

STONIER, A. W. and HAGUE, D. C. *A textbook of economic theory.* (New York: Longmans Green. 1953. Pp. x, 513. $5.)

TAWNEY, R. H. *The Webbs in perspective.* The Webb memorial lecture, 1952. (London: Univ. of London. 1953. Pp. 21. 2 *s.* 6 *d.*)

Economic History; National Economies; Economic Development

ASHWORTH, W. *Contracts and finance—history of the second World War.* (London: H. M. Stat. Office and Longmans. 1953. Pp. v, 309. 22 *s.*, 6 *d.*)

BOEKE, J. H. *Economics and economic policy of dual societies—as exemplified by Indonesia.* (New York: Inst. of Pacific Relations. 1953. Pp. x, 324. $4.50.)

This is a revised and enlarged version of the author's two earlier studies, *The Structure of the Netherlands Indian Economy* (1942) and *The Evolution of the Netherlands Indies Economy* (1946).

COCHRAN, T. C. *Railroad leaders 1845-1890: the business mind in action.* Stud. in entrepreneurial hist. (Cambridge: Harvard Univ. Press. 1953. Pp. ix, 564. $7.50.)

CROSLAND, C. A. R. *Britain's economic problem.* (London: Jonathan Cape. 1953. Pp. v, 224. 12 *s.*, 6 *d.*)

FAY, C. R. *Round about industrial Britain 1830-1860.* The Toronto lectures. (Toronto: Univ. of Toronto Press. London: Geoffrey Cumberlege. 1952. Pp. 227. 45 *s.*)

GEIGER, T. *Communism versus progress in Guatemala.* NPA planning pamph. no. 85. (Washington: Nat. Planning Assoc. 1953. Pp. viii, 90. $1.25.)

GINSBURG, N. S. *Economic resources and development of Formosa.* (New York: Institute of Pacific Relations. 1953. Pp. 58. $1.)

HARRIS, M. *Origin of the land tenure system in the United States.* (Ames: Iowa State College Press. 1953. Pp. xiv, 445. $7.50.)

The author's purpose has been to examine ". . . the processes through which the land tenure system of the United States became what it was at the time of its emergence just prior to 1800. Thus, the book deals chiefly with tenure processes during the two centuries of the Colonial era. It focuses special attention on: (1) changes made in the land tenure system prior to establishment of the national government; and (2) forces, factors, conditions, and situations that brought about these changes and finally secured their formal recognition" (From the Preface).

HOUSE, A. V., ed. *Planter management and capitalism in ante-bellum Georgia: the journal of Hugh Fraser Grant rice-grower.* (New York: Columbia Univ. Press. 1954. Pp. xvii, 329. $4.75.)

HURSTFIELD, J. *The control of raw materials—history of the second World War.* (London: H. M. Stat. Office and Longmans. 1953. Pp. v, 530. 35 *s.*)

JOHNSTON, B. F. *Japanese food management in World War II.* (Stanford: Food Research Institute, Stanford Univ. 1953. Pp. xii, 283. $7.50.)

KUCZYNSKI, J. *Die Geschichte der Lage der Arbeiter in Deutschland von 1789 bis in die Gegenwart.* Teil I, *1933 bis Mai 1945.* 3d rev. ed. (Berlin: Verlagsgesellschaft die Freie Gewerkschaft. 1953. Pp. 308.)

A review of the second edition of Volume II of this work appeared in the March 1950 number of this *Review* (XL, 200-02). The present volume, to be followed by Part II, covers the period of the Nazi regime in Germany.

PHELPS BROWN, E. H. *Economic growth and human welfare.* Three lectures delivered to the Delhi School of Economics. (Delhi: Ranjit. 1953. Pp. 55. 3 *s.*, 6 *d.*)

PIERCE, H. H. *Railroads of New York: a study of government aid 1826-1875.* (Cambridge: Harvard Univ. Press. London: Geoffrey Cumberlege. 1953. Pp. viii, 208. $3.)

PIRENNE, H. *The stages in the social history of capitalism.* Soc. Sci. Papers academic reprints no. 1; an address delivered at the Internat. Congress of Hist. Stud. in London, April 1913. (Stanford: Academic Reprints. 1953. Pp. 22. 75¢.)

RATNER, S., ed. *New light on the history of great American fortunes: American millionaires of 1892 and 1902.* (New York: Augustus M. Kelley. 1953. Pp. xxvii, 106. $3.)

This volume reproduces two lists of American millionaires, the first a 93-page document published by the *New York Tribune* in its supplement, *The Tribune Monthly,* June 1892; the second, a much shorter document published in the *New York World Almanac and Encyclopedia 1902.* There is an introductory essay, "Toward a Reinterpretation," by Sidney Ratner.

RUOPP, P., ed. *Approaches to community development: a symposium introductory to problems and methods of village welfare in underdeveloped areas.* (The Hague: W. van Hoere. 1953. Pp. xvi, 352. $3.)

Five of the eighteen chapters are devoted to the economics of community development. Other parts of the book consider, respectively, the sociology of community development, education for community development, and regional considerations. This last part contains chapters on Africa, the Arab Middle East, India, Indonesia, and Latin America.

SCHLEIFFER, H., compiler. *Bibliography on the economic and political development of Indonesia.* (Cambridge: Project on the Economic and Political Development, Center for Internat. Stud. 1953. Pp. 357, mimeo.)

SCHLEIFFER, H., and CRANDALL, R. *Index to economic history essays in Festschriften 1900-1950.* (Cambridge: Arthur H. Cole, Harvard Univ. Press. 1953. Pp. 68. $2.50.)

Economic strength for the free world—principles of a United States foreign development program. A report of the MSA Advisory Committee on Underdeveloped Areas. (Washington: Mutual Security Agency. 1953. Pp. 36.)

The national income of the Philippines and its distribution. UN pub. 1953.11.H.3. (New York: Columbia Univ. Press. 1952. Pp. 46. 40¢.)

Revenue administration and policy in Israel. UN pub. 1953.11.H.5. (New York: Columbia Univ. Press. 1953. Pp. 110. $1.)

The trust territory of Somaliland under Italian administration. UN pub. 1953.11.H.2. (New York: Columbia Univ. Press. 1952. Pp. ix, 343. $3.50.)

Statistics and Econometrics

Bross, I. D. F. *Design for decision.* (New York: Macmillan. 1953. Pp. viii, 276. $4.25.)
A nonmathematical introduction to the subject of statistical decision.

Glaser, E. *Interindustry economics research program of the U. S. government.* Reprinted from *Input-output relations,* proceedings of a conference on inter-industrial relations held at Driebergen, Holland. (Leyde: H. E. Stenfert Kroese. 1953. Pp. 5.)

Moroney, M. J. *Facts from figures.* Rev. ed. (Baltimore: Penguin Books. 1953. Pp. 4761. 3 *s.*, 6 *d.*)
Statistical methods, primarily for the layman.

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Economic Systems; Planning and Reform; Cooperation

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TOWER, C. H. *Secondary boycotts and the Taft-Hartley act: some suggestions for amendment.* George Washington Univ. Law Rev., Apr. 1953. Pp. 26.

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NOTES

Morris A. Copeland has been appointed chairman of the American Economic Association nominating committee for the current year. He would appreciate having suggestions for officers for next year at as early a date as possible. Such suggestions may be addressed to him at Cornell University.

Retirements

The following members of the profession have been reported as retiring from teaching at the end of the current academic year:

A. G. Anderson, professor of management at the University of Illinois.

Paul F. Brissenden, professor of economics, Graduate School of Business, Columbia University.

Daniel H. Buchanan, professor of economics, University of North Carolina.

E. A. Kincaid, professor of economics, University of Virginia.

Melvin M. Knight, professor of economics, University of California, Berkeley.

Harold A. Logan, professor of political economy, University of Toronto.

James E. Moffat, professor of economics, Indiana University.

Lewis C. Sorrell, professor of transportation and business organization, School of Business of the University of Chicago.

Publications

The first (1953) annual number of *Japan Science Review* (*Economic Sciences*) has now appeared. This is an English language publication of the Japan Union of Associations of Economic Sciences, and "is aimed chiefly at international liaison or maintenance of closer relation between Japanese and foreign scientific circles." The first number is devoted to ten articles reviewing the postwar state of Japanese economic thought in the fields: money and banking, history of economic doctrines, international economics, Western social and economic history, public finance, transportation and communication, economic theory, commodity economics, insurance. The editor-in-chief is Kiyoshi Kurosawa.

In October 1953, the Universities-National Bureau Committee for Economic Research (a joint organization of twenty-eight universities and the National Bureau of Economic Research) held a two-day conference at Princeton University devoted to an analysis of policies to combat depressions. Mimeographed sets of the conference proceedings may be obtained from the National Bureau of Economic Research, 1819 Broadway, New York 23, N.Y., at $1.50 per copy.

Research Grants and Fellowships

A non-profit organization, The Population Council, Inc., has recently been established to encourage research and education in the relationship of the world's population to its material and cultural resources. The Council has already made a number of research grants to universities and other established organizations, and has established some fellowships for

the training of students in the field of population. For information relating to this program, inquiries should be addressed to Mr. Frederick Osborn, Executive Vice-President of the Council, 230 Park Avenue, New York 17, N. Y.

Deaths

H. Peter Greenwood, associate professor of finance at the University of Southern California, November 27, 1953.

William F. Hauhart, of St. Louis, Missouri.

W. M. Young, assistant to dean of College of Commerce, Louisiana State University, July 2, 1953.

Appointments and Resignations

Paul A. Baran, of Stanford University, lectured at the University of Oxford on the political economy of growth during the Michaelmas term 1953.

Herbert Baum, formerly with the Department of State, is now economist with the American Fruit Growers, Inc., in Los Angeles, California.

Julius B. Bearnson has retired from his professorship in economics at the University of Utah.

Nathan Belfer has been promoted to associate professor of economics at the Pennsylvania State College.

Richard C. Bernhard has been appointed lecturer in economics at the University of Oregon in the winter and spring terms.

Arthur I. Bloomfield was on leave from the Federal Reserve Bank of New York late in 1953 as a member of the staff of the Commission on Foreign Economic Policy.

Courtney C. Brown, formerly assistant to the chairman of the Board, Standard Oil Company of New Jersey, has been appointed dean of the Graduate School of Business, Columbia University.

Martha S. Browne has been promoted from assistant professor to associate professor of economics at Brooklyn College.

Grant Calder has been promoted to associate professor of management at the University of Utah.

Thomas H. Carroll has resigned as dean of the School of Business Administration of the University of North Carolina to become associate director of the Ford Foundation.

Walter A. Chudson, of the Department of Economic Affairs, United Nations, has been appointed visiting lecturer in law at the Yale University Law School where he will give a seminar on the legal and economic aspects of international investment.

J. M. Clark, of Columbia University, is a member of the Attorney-General's Committee to Study the Anti-Trust Laws.

A. C. Condon has been named chairman of the business education department, College of Commerce and Business Administration, University of Illinois.

P. D. Converse has been appointed chairman of the department of marketing, College of Commerce and Business Administration, University of Illinois.

Morris Copeland, of Cornell University, is visiting professor of economics at Columbia University in the spring semester of the current academic year.

Garfield V. Cox, Robert Law professor of finance in the School of Business of the University of Chicago, has been elected president of the American Finance Association.

Howard A. Cutler has been promoted to associate professor and head of the department of economics at the Pennsylvania State College.

Lloyd DeBoer has been promoted to the rank of instructor in marketing at the University of Illinois.

Webster W. Decker has been promoted to associate professor of accounting at the University of Utah.

W. H. Delaplane, head of the economics department at Texas A. & M. College has been appointed dean of the School of Arts and Sciences at that institution, effective October 1.

E. R. Dillavou has been appointed chairman of the department of business law, College of Commerce and Business, University of Illinois.

John T. Doutt, formerly of the University of Rochester, has been appointed assistant professor of industry in the School of Business Administration of the University of Pittsburgh.

Edward N. Dubois has been appointed assistant professor of business statistics at the Pennsylvania State College.

Robert R. Edminster has been appointed assistant professor of economics at the University of Utah.

Richard F. Ericson has been appointed associate professor of economics and head of the department of economics at Stetson University.

Kenneth Field, director of industrial relations research and policy and procedure development, U. S. Steel Corporation, was a member of the Office of Defense Mobilization Committee on Manpower Resources for National Security.

George F. Fuller has been appointed professor of economics at the University of Utah.

James Gemmell has been promoted to professor of business education and economics at the Pennsylvania State College.

Carter Goodrich has resumed his duties at Columbia University after serving from February 1952 to September 1953 as special representative of the secretary-general of the United Nations in Bolivia in charge of the program of technical assistance.

Franklin P. Hall served during the past summer as consultant on economic programs to the Connecticut Development Commission and has resigned from the faculty in economics at Trinity College to accept an appointment as industrial economist with the Federal Reserve Bank of Boston.

C. Lowell Harriss has a Fulbright professorship to lecture this year at the Nederlandsche Economische Hoogeschool.

Richard W. Havens has been elected president and chief executive officer of the Jenkintown Bank & Trust Company.

Samuel P. Hayes, Jr., formerly head of the Far East Programs of the Foreign Operations Administration, has been named the first director of the Foundation for Research on Human Behavior at Ann Arbor, Michigan.

Frank L. Hendrix has been appointed instructor in transportation and economics in the College of Business Administration, University of Tennessee.

Arnold K. Henry, professor of transportation in the Wharton School of Finance and Commerce, has been appointed vice-provost of the University of Pennsylvania.

H. Theodore Hoffman, associate professor of economics, has been appointed vice chairman of the department of economics at the University of Detroit.

John A. Howard, assistant professor of business administration in the School of Business of the University of Chicago, has been appointed director of business studies in University College.

William E. Hurley has been appointed assistant professor of business management at the Pennsylvania State College.

Arthur H. Johnson has been appointed associate professor of accounting at the University of Utah.

Jacob O. Kamm has been elected executive vice president of the Cleveland Quarries Company.

Robert W. Kautz has been appointed assistant professor of business statistics at the Pennsylvania State College.

Simon Kuznets has been appointed professor of political economy at the Johns Hopkins University effective July, 1954.

Bernard Logan, formerly of the University of Akron, has been appointed assistant professor of economics in the School of Business Administration of the University of Pittsburgh.

Keith MacEachron has resigned from the School of Business Administration of the University of Pittsburgh.

Professor D. C. MacGregor has been promoted to professor of political economy at the University of Toronto.

M. J. Mandeville has been appointed chairman of the management department, College of Commerce and Business, University of Illinois.

E. Orth Malott has been promoted to associate professor of finance at the Pennsylvania State College.

Will E. Mason is now assistant professor of economics at Washington and Jefferson College.

Marion K. McKay has retired from the School of Business Administration of the University of Pittsburgh.

Morris Mendelson has been promoted to associate professor of economics at the Pennsylvania State College.

Raymond F. Mikesell, of the University of Virginia, is serving as economic consultant to the Randall Commission.

C. A. Moyer has been appointed chairman of the accountancy department, College of Commerce and Business, University of Illinois.

Sumant K. Muranjan, of Sydenham College, Bombay, India, is visiting lecturer in economics at the University of Texas.

Robert J. Myers has resigned as director of the Division of Production and Productivity in the FOA Special Mission to France to become chief statistician of the International Labour Office in Geneva.

Benjamin N. Nelson has returned to the University of Minnesota after a year's leave at Columbia University and has been appointed chairman of the European Heritage sequence in the Humanities program.

G. Kenneth Nelson has been promoted to associate professor of accounting at the Pennsylvania State College.

Carl A. Nordstrom has been appointed instructor in the department of economics of Brooklyn College.

Ragnar Nurkse has been granted a Schuyler Fiske Seager fellowship by Columbia University and is doing research at Nuffield College, Oxford University, in the current year.

Walter Palmer has been appointed assistant professor of accounting at the University of Utah.

Robert S. Raymond has been appointed assistant professor of marketing at the Pennsylvania State College.

Raymond L. Richman, formerly of Westminster College, has been appointed assistant professor of economics in the School of Business Administration of the University of Pittsburgh.

Stefan Robock has been appointed chief economist for the Tennessee Valley Authority.

Anthony Sancetta has been promoted to associate professor of economics at the College of William and Mary.

Michael Schiff has been promoted to professor of accounting in the Graduate School of Business Administration, New York University.

Frank J. Schwentker has been appointed Julian Price lecturer in life insurance at the University of North Carolina.

Gordon S. Skinner, formerly of the University of Wisconsin, has been appointed assistant professor of economics in the College of Business Administration of the University of Cincinnati.

John W. Skinner has been appointed assistant professor of economics at Stetson University.

Edward K. Smith has resigned as financial economist of the Federal Reserve Bank of Boston to accept an appointment as assistant professor of economics and director of the Institute of Public Administration of Northeastern University. He continues as staff economist with the Committee of New England of the National Planning Association.

Ezra Solomon, of the School of Business of the University of Chicago, has been appointed editor of the *Journal of Business.*

Edmond Stone has retired from the School of Business Administration of the University of Pittsburgh.

Theodore A. Sumberg has accepted a one-year appointment as advisor to the Ministry of Economy of Nicaragua.

Donald S. Tucker, professor emeritus at Massachusetts Institute of Technology, is visiting professor at DePauw University in the current semester.

Haskell P. Wald, formerly on the staff of the Council of Economic Advisers, has been appointed research associate at the Law School of Harvard University to serve as economist for the International Program in Taxation.

George H. Warner has been appointed instructor in accounting at the Pennsylvania State College.

Richard M. Westebbe is in Holland doing research on the financial origins of the industrial revolution in Holland on a Fulbright fellowship.

Alice W. Wynd is lecturer in economics in the department of economics at the University of Rochester.

Elmer R. Young has been appointed associate professor of accounting in the University of Utah.

VACANCIES AND APPLICATIONS

The Association is glad to render service to applicants who wish to make known their availability for positions in the field of economics and to administrative officers of colleges and universities and to others who are seeking to fill vacancies.

The officers of the Association take no responsibility for making a selection among the applicants or following up the results. The Secretary's Office will merely afford a central point for clearing inquiries; and the *Review* will publish in this section brief description of vacancies announced and of applications submitted (with necessary editorial changes). Since the Association has no other way of knowing whether or not this section is performing a real service, the Secretary would appreciate receiving notification of appointments made as a result of these announcements. It is optional with those submitting such announcements to publish name and address or to use a key number. Deadlines for the four issues of the *Review* are February 1, May 1, August 1, and November 1.

Communications should be addressed to: The Secretary, American Economic Association, Northwestern University, Evanston, Illinois.

Vacancies

Research in economic security: National organization located in Chicago seeks person with wide research background and knowledge of survey work, preferably with some experience in conducting meetings and educational programs. P158

Economists Available for Positions

Labor, business and government, international public finance systems, history, theory, sociology, public administration: Man, Ph.D., Wisconsin, 1945. Ten years of teaching and government research and administration, writing; engaged in liberal arts college extension teaching and consultation with state agency; could be available currently but wishes summer, 1954, appointment leading to consideration for subsequent faculty position. Western location preferred. E158

Labor, economic theory, public finance, national income, government and business, wage and salary administration: Man, 39, married, Ph.D. Five years of teaching and five years of government experience in economics and industrial relations. Presently engaged in economic research for federal government. Seeks teaching and/or research position in economics and industrial relations. Available in June, 1954. E214

Investments, banking, business forecasting, international economics, business economics: Man, 40, married, Ph.D. Teaching and newspaper experience; publications. Interested in investment, financial, or business research position starting summer or fall, 1954. E263

Investment analysis, auditing, budgeting, business finance: Man, 50, J.D. Twelve years of experience in banking, credit, and investment in Europe; 5 years of auditing in large European corporations; 5 years as professor of business administration and accounting in an American university. Desires position as investment analyst or controller. Also interested in teaching position. E277

Economic analysis, business cycles, public finance, money and banking, national income, international economics, statistics: Man, 36, married, Ph.D. residence completed. Nine years as economist-writer with research and investment organizations; brief teaching experience; research in Middle East economy. Seeks research, writing, or teaching position. E278

International economics, principles, theory, history of economic thought, economic history, economic systems, money and banking, labor: Man, 41, married, Ph.D. Experience with Federal Security Agency, War Labor Board, UNRRA; university teaching and administrative experience; predoctoral research at London School of Economics. Now with private organization. Seeks position at college or university. E373

Economic analysis, money and banking, business cycles, economic theory, statistics, corporation finance, economic history, history of economic thought, international economics: Man, 32. Brief teaching and substantial research experience. Desires research and/or teaching position. Available in September, 1954. E382

Money and banking, private finance, economic principles, history of economic thought, comparative systems: Man, 40, married, Ph.D. Over two years of experience in government administration and research; 12 years of university teaching at graduate and undergraduate level; 6 years in present position. Interested in upper level position with opportunity to work with students majoring in economics. E403

Principles, air transportation, international economics, history of economic thought, labor economics, economic systems; allied areas, e.g., international organization, social psychology, etc.; interested in interdisciplinary approach to social sciences: Man, 33, B.A. (economics, education), M.A. (economics), Ph.D. (economics, psychology). Twelve years of research experience in various areas of economics and social sciences; currently employed in federal government. Desires teaching position in economics. E420

Labor, comparative economic systems, current economic problems, economic history, economic and social thought, money and banking, public finance, international trade, personnel and manpower policy: Man, 37, married, M.A., and Ph.D. residence completed at Columbia University. Six years of teaching economics and social science as well as background in adult education; 3 years as editor and research director in the book publishing and public relations field dealing with labor relations; 3 years of personnel and industrial relations work in industry; market and opinion research experience. Interested in teaching, research, writing, editorial and/or administrative positions. E434

International economics, labor, housing, economic principles and theory, economic development: Man, 35, Ph.D. Broad teaching, research, and government experience; presently with U.S. Mission to N.A.T.O. Desires teaching or research position. Available in September, 1954. E441

American economic history, corporation finance, business cycles, economic theory, statistics, economic principles: Man, 27, married, B.A., New York University; M.A., Columbia; mechanical engineering training, Polytechnic Institute of Brooklyn. Seeks part-time evening position teaching at a college in the New York metropolitan area. E456

Economic geography, economic history, economic policy, international trade, industry (especially location) studies, economic development, European, Asian, African affairs: Man, 38, married, Ph.D. Six years of graduate and undergraduate teaching experience; also research and writing; now teaching in Eastern university. E462

International economics, trade and banking, European area specialist: Man, married, LL.D., Ph.D. Resident in Canada for three years; willing to relocate. Experience in diplomatic and civil service, top-level international finance, industry, particularly export-import field, research, writing, broadcasting, lecturing. Seeks teaching or research position. E471

Marketing, banking and finance, statistics, business mathematics, business research: Man, 31, M.B.A., Ph.D. residence and examinations completed. Three years of college teaching experience; 2 years as economic analyst with consulting firm. Interested in college teaching and/or research position. Prefers Midwest. Available in June or September, 1954. E475

Market analysis, finance, urban land economics: Man, 37, married; course work completed for Ph.D. Fourteen years of private and government experience in operations and research in market analysis, industrial location and economic development, urban redevelopment and housing. Available as consultant or staff economist. E477

Industrial economics, international trade, economic policy, international relations and economics, foreign markets: Man, 51, married, European studies. Practical experience in responsible positions in industry, organization and control, foreign trade, trasportation, economic investigations and statistics; specialized in agricultural and food industry. Offers his 30 years of experience, together with command of several languages and knowledge of foreign countries, both in Europe and America. Seeks position in industry, economic research, control or investigations, and/or teaching. E481

Marketing, economics, industrial relations: Man, 33, B.S., M.B.A., course requirements completed for Ph.D. in business administration. Business experience. Interested in teaching or research position. Available immediately. E488

Economic research: Man, 27, married; B.A. in Economics, New York University (minors in government and history). Veteran; military writer in Army Air Corps. Will relocate. E489

Money and banking, investments, business economics, economic analysis, corporate finance, international economics: Man, 35, B.S., Ohio State University, M.A., University of Cincinnati, requirements for Ph.D. nearly completed. Ten years of experience in finance and investment; 1 year of teaching experience at outstanding Midwestern university; completed research in finance; extensive experience in public speaking. Desires teaching, writing, editorial, and/or administrative position. Available immediately. E491

Economic theory, public finance, business fluctuations, industrial organization, money and banking, statistics, international economics, economic history: Man, 35, married; Ph.D. residence and examination requirements completed at Columbia; in final stage of writing dissertation. Three years of university teaching experience; several years of research experience and of experience in federal government; also interested in public relations and administration. Desires research or teaching position; references can be obtained from Placement Bureau, Columbia University. Available immediately. E492

International trade, money and banking, labor economics, economic theory, history of economic thought, industrial management: Man, 28, B.A., M.A., Ph.D. Thesis on problems of foreign trade and economic development in countries of Southeast Asia and other underdeveloped countries. Brief experience in foreign trade and teaching. Desires an academic or nonacademic position. Available immediately. E494

International economics, national economies, national income analysis, economic fluctuations, labor problems, social and political theory, sociology: Man, 44, B.A., Ph.D., Harvard. Seven and a half years of teaching, $1\frac{1}{2}$ as department head; 10 years of experience as government economic analyst, of which last 5 years abroad; numerous publications. Desires to return to responsible academic post in the U.S. Available in September, 1954. E495

Transportation, traffic management, public utilities, economics, marketing, accounting: Man, 50, married, M.B.A., near Ph.D. Eighteen years of teaching and administrative experience in leading universities; also practical experience in transportation field. Seeks position in college in Rocky Mountain area or West Coast, starting summer or fall, 1954. E497

Principles, industrial relations, labor, sociology: Man, 31, M.A., Minnesota, half of doctorate course work completed. Veteran; research experience in industrial relations, regional economics; taught supervision courses; publications. Available immediately for academic or nonacademic position. E498

Economic principles, international economics, money and banking, national income analysis, statistics: Man, 27, married, M.A., doctorate requirements satisfied except for thesis, University of Chicago. Two years of experience in government (ECA, MSA); now in private industry as market analyst. Seeks teaching position in Chicago area. E501

Statistics, finance, monetary theory, economic theory: Man, 39, married, Ph.D., University of Chicago. Teaching and research experience; many publications. Seeks teaching position with opportunities for productive scholarship and research. E502

Economic analysis, welfare theory, comparative economic systems, economics of socialism: Man, 49, married, Ph.D. Seven years of full-time graduate work, including 2 years Carnegie-financed postdoctoral research training at Columbia University; 6 years of university teaching; 7 years as government economist-statistician in Washington and Europe; 4 books published. Desires teaching or research position. Available in September, 1954. E503

Labor, consumer economics, comparative economic systems, theory, elementary economics: Man, 55, married, A.B., Harvard University, *magna*, Ph.D., Columbia University. Widely traveled; publications; 17½ years of teaching at college level. Seeks new position because of special circumstances. E504

Statistics, business mathematics, public finance, corporation finance, investments, money and banking, economic history, international trade, economic theory: Man, 39, married, M.A., Ph.D. residence, language, examination requirements will be completed by June, 1954. Ten years of university teaching experience. Interested in either teaching or investment position. E505

Principles of accounting and economics, statistics, corporation finance and investments, American economic history, money and banking: Man, married, M.A., will have completed all requirements for Ph.D. except dissertation by June, 1954. Registered investment adviser; 8 years of teaching experience. Desires teaching or investment position. E506

Economic history, business economics, government and business, public finance, elementary and intermediate economic theory, investments: Man, 33, Ph.D. Five years of teaching experience; 1½ years with Wage Stabilization Board; currently employed as a financial analyst by one of the nation's largest corporations. Desires teaching and/or research position in Midwest. Available in June or September, 1954. E507

Principles, public finance, economic theory, comparative economic systems, economic history, economic planning and development: Man, 32, married, B.A., Ph.D. to be conferred in June, 1954, California; publications. Now teaching at Far Western university. Desires new position for September, 1954. E508

Economic analysis, international economics, economic theory, money and banking: Man, 28, 2 years of graduate work in Far Eastern Studies, M.A., Yale, Ph.D. thesis in preparation, University of Michigan. Good language qualifications; some experience in research and in business. Interested in academic or nonacademic position; would consider position in Far East, preferably in Japan. Available immediately. E509

Economic principles, labor problems, history of economic thought, public utility economics, government and business: Man, 27, married, Ph.D. expected in June, 1954. Teaching and research experience at large Midwestern university. Willing to relocate. Available in June, 1954. E510

Labor, industrial relations, economic principles, money and banking, international economics, personnel management, marketing: Man, 24, veteran, B.A., M.A., New York University, half of Ph.D. course work completed. One year of experience in personnel and industrial relations; 1 year research for U.S. Army; fluent German. Seeks academic or nonacademic position. Available in September, 1954. E511

International economy, economic systems, general economics: Man, 41, Law and Pol. Sc. Dr., M.A. in economics. Five years as professor of economics; 3 years of diplomatic service (commercial treaties); 3 years of economic research in French governmental agency. Speaks Czech, English, German, French, Russian. E512

Economic history, history of economic thought, economic theory, money and banking, business cycles, international trade and economics, economic geography, corporation finance, investments, marketing: Man, 29, married, Ph.D. (Rotterdam). Fluent English and 4 other languages; dissertation, written in English, published and to be translated into Italian. Some industrial and teaching experience. Desires teaching, research, or advisory position. Available now or in September, 1954. E513

International economics, public finance, monetary economics, statistics, economic development, economic theory: Man, 26, married, veteran, M.A., Columbia University, dissertation in final stage, Ph.D. expected in June, 1954. Two years of college teaching experience; research in economic development, British Commonwealth finance. Desires position in research or teaching. Currently holding fellowship at Columbia University. Available in June, 1954. E514

Theory, money and banking, international trade, business cycles, comparative systems: Man, 27, Ph.D., Columbia University. Teaching and government research experience; publications in leading professional journals. Currently teaching at Eastern state university. Seeks teaching position. E515

Business economist, commerce and industry development specialist: Man, 47. National level economic development experience with private business consulting engineering firms, the U.N., U.S. and foreign governments; Iraq, Japan, Korea, China, Philippines. Now with the U.S. government. Seeks position with private business industrial, commercial, or consulting firm in U.S. or overseas. E516

Principles of economics, labor problems, public finance, American economic history: Man, 30, M.A. in economics and M.A. in philosophy. Two years of teaching economics; also personnel experience in private business. Seeks teaching or research position. Available after June, 1954. E517

Business administration and organization, economics, retailing: Man, 41, married, Ph.D. Wide business experience for past 17 years as president and general manager of successful Midwestern manufacturing concern of nondurable merchandise; some teaching experience. Desires teaching position at college or university. E518

International trade, comparative economic systems, urban land economics, marketing, history of economic thought, public finance, money and banking, economic history of Europe: Man, 49, married, Ph.D. Research fellowships; 7 years of university and college teaching; 4 years of research in federal government; experience as consultant; multilinguist; extensive foreign travel. Desires teaching or research position. Available in summer or fall, 1954. E519

Labor, industrial relations: Man, 30, married, veteran, M.A. (Economics), University of New Hampshire, M.S. (Industrial Relations and Economics), Columbia University, with additional graduate work in economics at American University. Master's thesis on pensions and vesting rights in union-management plans. Former college instructor and government labor economist, experienced in research, analysis, and administrative writing, with management training, supervisory responsibilities and field survey experience. Interested in teaching or industrial opportunity in economics and labor relations. Available immediately; will relocate. E520

Investments, corporate and real estate finance, capital markets: Man, Ph.D. Twenty years of experience in institutional investment; 5 years of university teaching experience. Now supervising nine-figure portfolio; broad experience in economic and financial research. Desires university teaching, preferably at graduate level and with some opportunity for research. Would consider portfolio management or financial adviser position. E521

Industrial relations, economic analysis, business fluctuations: Man, 36, Ph.D., University of Chicago. Experience includes graduate and undergraduate teaching, top-level federal government position, industrial relations executive in private industry, and university research. Interested in teaching and research. E522

Labor, industrial relations, money and banking, principles: Man, 32, Ph.D. Four years of teaching experience; 2 years of research. Excellent references. Seeks teaching or research position. E523

Executive-adviser, international aid program, international trade, heavy-light manufacturing, construction (multimillion-dollar development projects), process industries: Man, 40, successfully completing 5½ years as top (cabinet) level financial adviser Middle East country, July, 1954. Interested in top-flight foreign work assignment as consultant (project, costs-fee basis) or term contract employment basis (mid-five-figure salary requirement) with similar foreign country or adequate American firm where sound, ethical, dynamic experience indicates real value. E524

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